FITTING OUT NUMBER

REPORTS reach us from all sections of the country of boats building for the 150-mile Sweepstakes Race which will be held at Detroit on Labor Day, 1923. The prizes for this event will amount to a total of \$25,000, divided into ten or twelve parts with \$10,000 in cash to the boat coming in first. The complete rules governing the contest follow:

The race shall be managed and supervised by a Race Committee of five to serve one year, appointed by the President and confirmed by the Executive Committee of the Yachtsmen's Association of America. The Race Committee shall be in charge of all details of the race and shall have power to appoint their assistants, sub-committees, officials, etc. Rulings of the Race Committee shall be final.

I The Race Committee shall serve for a period of one year and thereafter until their successors are appointed. The Race Committee shall decide what racing rules the race shall be run under. The Race Committee shall determine the distribution of prizes. No prizes shall be presented within twenty-four hours after the first boat finishes.

These rules shall remain in effect without change, through and including the 1924 race. Changes, if any, in these rules, to become effective subsequent to 1924 race, may be suggested by the Race Committee, and if approved by the Executive Committee of the Yachtsumen's Association of America may be put into effect not earlier than eighteen months after their announcement and publication.

The length of the race shall be one heat of at least 150 statute miles. The length of the course shall not be over four statute miles, nor less than two miles. Whenever possible, single turning buoys shall be used with a straightaway between. The race shall be run in such a direction that the boats shall pass turning buoys on their port hand.

I The competing boats shall be at least 25 feet in length on the water line, and have a water line beam of at least five feet at their widest section. The hulls of competing boats must have no breaks in the longitudinal continuity of the immersed surface, not more than one lifting surface, and must conform to the committee's idea of what is generally classed as a displacement type. The keel and chine (or bilge) must be continuous and must extend from the bow to the stern (or stern post). Steps, either transverse or longitudinal, will not be permitted. Surfaces on each side of the keel line between the keel and the chine (or bilge) must be continuous and not contain breaks, jogs, or notches of any description. Note: Sea Sled model acceptable.

T Competing boats shall be fitted with at least two transverse bulkheads, practically water tight. Competing boats shall have seating ac-



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119 WEST 40th STREET NEW YORK, N. Y

commodations for at least two persons. Competing boats must have the motor compartment entirely closed in with hatches. The power plant shall be of the internal combustion type.

The total maximum piston displacement in the engine or engines shall not exceed 1350 cubic inches. Engines must exhaust at the stern or under water when under way. Engines shall be equipped with an efficient reverse gear or method of reversing and idling. Engines shall be equipped with an efficient selfstarter, carried complete during race.

¶ Measurement of Hulls and power plants must be verified prior to the race by a Committee appointed by the Race Committee.

TEntries must be received by the Race Committee at least fifteen days before the date set for the race. An entry fee of \$100 must accompany the entry, which fee will be returned in case the boat starts in good faith. There shall be no limit to the number of challenges from any individual or club.

Competing boats shall be steered by amateur helmsmen. For the purpose of this race, an amateur is defined as one who is not or has not been within the last five years, engaged or employed in mechanical capacity in the business of building, operating, or repairing boats or internal combustion engines, as a means of livelihood.

T Competing boats must carry full equipment in the race including floor boards, seating accommodations for two persons, etc. Competing boats must carry a racing number, assigned by the Race Committee, and have same painted on each side and stern. Numbers shall be at least fifteen inches high.

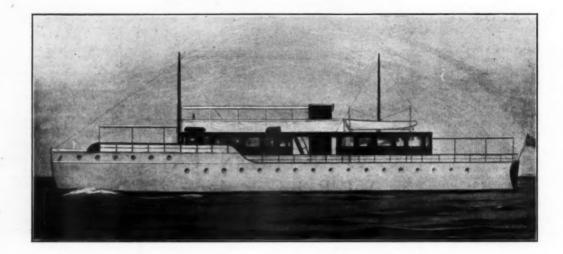
Competing boats must report to the Race Committee at a place designated by them at least one hour previous to the start of the races, and immediately upon crossing the finish line, competing boats must again report at a place designated by the Race Committee.

¶ Competing boats must demonstrate to the satisfaction of the Committee that they are manageable at racing speed and not a menace to the safety of other competitors.

¶ The race shall start at 2 P.M. No postponements from the advertised time of start of the race shall be allowed for any cause.

T Boats in order to qualify must show an average speed of 35 miles in 1923 and 40 miles an hour in 1924. This speed must be made over two laps of the regular race course.

Race Committee: F. R. Still, Chairman; S. D. Waldon, Webb Jay, Charles F. Chapman, W. D. Edenburn.



DODGE-BUILT

CRUISERS

We announce the organization of a complete boat building plant for the construction of motor boats, speed boats and motor yachts up to one hundred and twenty feet.

Standardized boats will be built, as well as craft of special design. In fact the main purpose is to provide in several standardized types the high quality of design, materials and workmanship usually confined to yachts constructed under the supervision of consulting naval architects and engineers.

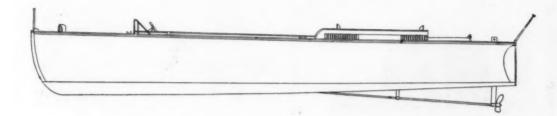
RUNABOUTS

The personnel of this organization includes builders and architects who have gathered their experience in the best class of yacht work and speed boat building. Under their direction are expert boat craftsmen with specialists for each operation.

We offer organization, knowledge and experience with the financial ability and determination to do things right at any cost. Every Dodge-built boat is unconditionally guaranteed for three months from delivery.

HORACE E. DODGE BOAT WORKS 2670 Atwater Street, Detroit

New York Representatives: E. B. Treat and G. C. Codd, 50 Vanderbilt Avenue, New York, N. Y. Telephone: Murray Hill \$180



RACING BOATS

THE HORACE DODGE SPECIAL

A 33 Ft. Fast Runabout

A gentleman's speed runabout of larger accommodations than are usually found in this type of boat. The forward cockpit comfortably holds eight to ten persons; three or four find ample room on the transverse seat of the after cockpit.

One-man control from the steering wheel, An engine man is required only for racing. This makes an ideal owner's tender for larger yachts, a good boat for club racing, for general fast runabout service and for use on inland lakes and rivers.

With 400 H. P. motor, speed 45-55 miles per hour.

With 100 H. P. motor, speed 25-30 miles per hour.

Other Dodge Standardized Boats

A 15 ft. tender and runabout powered with two cylinder engine.

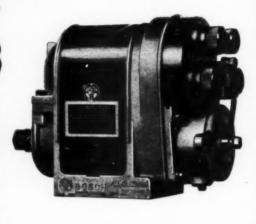
A 20 ft. runabout with 100 H. P. engine. Speed 35-40 miles per hour.

All boats unconditionally guaranteed for three months from delivery.

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AT type Bosch Magneto, waterproof, for 4 and 6 cylinder engines.

B type Bosch Ma to, waterproof, for id 2 cylinder engine

47 out of 72 use the Bosch Magneto

T the New York Motor Boat Show 72 engines of various makes were exhibited with magneto ignition.

47 of them (66 per cent) were equipped with Bosch Magnetos.

95 per cent of the engines to be produced during 1923 by the exhibiting manufacturers of magneto equipped engines will be fitted with Bosch Magnetos.

This does not include the engines to be made by manufacturers who did not exhibit. Many supply Bosch Magneto Ignition as standard equipment.

The Bosch Magneto is unquestionably the popular choice—it dominates the field because it is recognized everywhere as the most efficient and dependable ignition unit available for marine use.

Be Satisfied

Specify Bosch

AMERICAN BOSCH MAGNETO CORPORATION

Main Office and Works: Springfield, Mass.

New York

Chicago 600 Official Service Stations-Expert Service Everywhere

Detroit

San Francisco

Advertising Indea will be found on page 160



"Motor? Say, this White Cap is it! Gets away like a brindle pup with a ham bone—steady as an 8-day clock. Speed?—You tell 'em! And as easy to look at as you are, Sister!

Only took one glance to tell me it was the most motor for the least money that ever went into a hull. If he's got a 'put! put!' boat, tell him to put in a White Cap or take back the ring!"

COMPLETELY EQUIPPED
White Cap "6" \$985.00 White Cap "4" \$785.00
1923—AM \$1050.00

BOAT BUILDERS-A Proposition of Interest

WISCONSIN MOTOR MFG. COMPANY

Milwaukee - Wisconsin

BRANCHES AT - New York

Chicago

Cleveland

Philadelphia

Los Angeles

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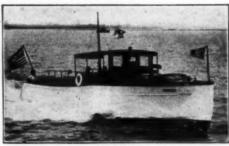
GREATLAKES

CRUISERS

RUNABOUTS

THE Great Lakes 30 ft. Fast Runabout is a big roomy, built staunchly for the hardest kind of service. With accommodations for eight and a speed of over 40 miles, it is practical for any runabout use,—as a speed boat, racer or as a tender for large yachts.

This model is the culmination of many years devoted to the development of fast runabouts and cruisers. It is one of half a dozen types of runabouts and sedans we have to offer.



42-footer



54-faota

You are certain of complete and lasting satisfaction if you select one of the standardized types built by Great Lakes. For each boat is an exact duplicate of many successful predecessors, changed only in minor details to suit the owner's requirements or to add improvements suggested by experience in actual service. This is an advantage of the standardization idea as important as the economy gained by standardized production.

Let us send bulletins describing the type of boat you prefer. Just mention your requirements.

Great Lakes Boat Building Corporation Milwaukee, Wisconsin

LARGEST BUILDERS OF EXPRESS CRUISERS IN AMERICA



62-foots

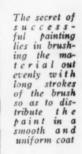


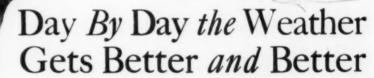
76-foater





119 WEST 40th STREET NEW YORK N.Y. An engine to be properly refinished should be thoroughly cleaned and repainted with a good brand of engine enamel





Springtime Is Here and Summer Just Around the Corner—The Industrious Boatman Has Lots to Do Before His Boat Is Fit for Service

By F. W. Horenburger

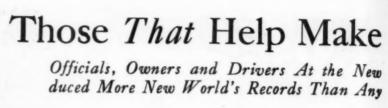
Signs of spring are in the air. The little boys are breaking out the marbles and begging their daddies for baseball mitts. The ladies are appearing with their new hats and outfits. A few stray robins have returned from Florida, or whatever fashionable winter resort they have patronized, and all the rest of the world feels gay and cheerful with the breath of warmth in the first few days of warm sunshine. The anxious motorboatman, chafing under the restraint of snow and ice which have kept him from his pet for many weary months, begins to lay his plans for going overboard early and starting in on a new season of his favorite pastime.

Who said spring was here? Just after everybody gets all enthused over the first fine days, it goes and spoils the whole works. A brand new blizzard comes down from somewhere and covers the earth with a fresh blanket of snow. There is nothing left for the poor boatman to do but to light a new pipe and find solace in the fact that summertime is bound to come and that a few snowstorms more or less will only act as a very temporary stay. Good days are bound to come and even the most impatient of us can wait an extra week or two in the

hope of better times later.









Commodore Walter B. Wilde, of Peoria, and his mechanician, who won in every class in which they were entered at the recent regatta at New Orleans, including the 610, the 725, and the 1,100 cubic inch classes

History in Motor Boat Racing

ew lny



The crew of Arab VII, Commodore Ralph Sidway's Hacker-built hydroplane which won the first heat of the 1,100 cubic inch class at New Orleans

Above:—Commodore Harry A. Parsons, of Cleve-land, Ohio, owner and driver of Oh Min. An accident befell the power plant of his speedster so he had no chance to perform at New Orleans



Native boys are thoroughly at home in or on the water

On the port tack, the radiance of the af-

The Last Journey of

Wherein Both the Author and the Much Traveled Auxiliary Yawl-Selling

By Alfred F.

OW, after many miles of adventure and as many yards of descriptive narrative, the Odyssey of Hippocampus draws to a belated close. Readers of MoToR Boating who have stood by her through thick and thin, through storms and water spouts and sharks and showers of rock, have this reward for their patience—my last cruise in Hippocampus is ended. Those others (and there must be thousands) who have hoped against hope that the Hippo would sink with all hands and the typewriter, may take heart from this piece of news—no sequel, nor epilogue, nor revival will follow this last chapter of her travels. Hippocampus has been sold out of the family, and no longer flies my private signal of a roving ankle bone on a field of Caribbean blue.

But not even the weariest reader is to be let off with this plain statement of fact. There's much more to selling a boat than a Liberty Bond, for instance, and it must be remembered that when last heard of the Hippo was down in the San Blas country of Panama, a land where boat-buyers are unknown and where a five-dollar bill is a fortune. Even a writer of fiction would have to extricate his heroine from this position before disposing of her finally. Simple justice to my own

heroine, who has carried me in two summers over more delightful sea miles than the average sailboat encompasses in ten, demands that her affairs be terminated with dignity and composure.

Observe her, then, as dawn broke on the morning of August 24, 1922. Her sails furled, her deck shiny with dew, her forefoot dipping gracefully to the patter of lazy wavelets. To southward of her

cruise in Hippocampus is ented. In thousands) who have hoped against homeward sails homeward cruise in Hippocampus is ented. It is pocampus as no wy sails. His pocampus sails homeward chapter of her travels. Hippocafamily, and no longer flies my phone on a field of Caribbean blue.

But to be of fac a boa stance when down Panan unknown is a fivould from her fit.



A negro village on the shore of Cape Manzanillo

Hippocampus

Reader Take Leave of This Adventures in Panama

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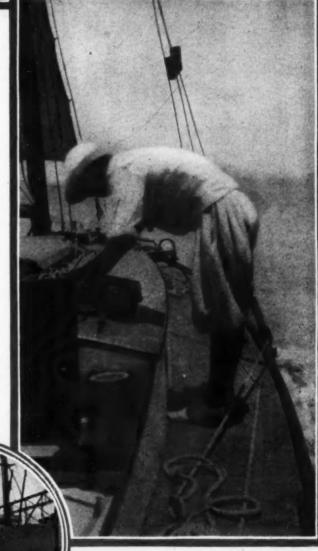
stretches the axial range of the Isthmus of Panama, blue and mysterious in the strengthening light; to westward the entrancing constellation of the San Blas islets—and, immediately over her counter, a cayuca load of San Blas Indians paddling madly to get aboard and pilot the strange boat through a concealed circle of coral reefs. Always in the San Blas gulf there are the inspiring mountains of the Spanish Main, always the witchery of the palm-covered cays, and inevitably a boatload of childlike Indians either approaching or leaving the fascinating stranger.

Mrs. Loomis and I, knowing by the experience of a week in the Indian country that we should be boarded at daybreak, had breakfasted and were heaving short the anchor line when the contingent of natives arrived. Immediately we got under way with power and I took my position in the bow to watch the rocks and shoals. Immediately the bottom came up to meet us, and I made elaborate signs to our volunteer pilots to inform them of this fact and of our five-foot draft. But they were unperturbed, and although I got out the lead and took

soundings of nine, eight, seven, and finally six feet, we motored sedately on, and in another moment saw deep water all around us. The Indians know their waters, and I don't doubt that if the greatest depth over that particular barrier reef had been five feet one inch, they would have taken us a cross

without mishap.

Having written in some detail of the life of the Indians in their island homes, I shall not elaborate on our stop at Rio Ciedras. But here we saw the Indians as



Jo, dressed in the uniform of the tropical day, coils the halyards

Hippocampus in comparison to the size of the steamship seems to be small indeed



Hippocampus cradled and lashed on the forward deck of the S. S. Pastores

we wanted to see them—not as at Carti Village where the presence of our guests, the Panamanian officials, put a damper to their natural curiosity and spontaneity, and not as at Nargana, which has been made a show place for

white visitors, but as simple, unspoiled savages amicably greet-ing strangers who, as they could see from our yachty appearance, came with no intention of exploiting them. Our run to Ciedras from our night's anchor-age was made under both power and sail, and our arrival was an occasion for most of the unat-tached boys of the mlage to paddle out to show us the best anchorage.

This was finally determined as a spot having six fathoms of water over a sandy bottom. I had just ascertained the depth when Jo called to me:

"Look! Three of the boys have dived and brought up bot-tom in their hands."

It was true enough. And although one of them seemed to suffer some annoyance from his ears as a result of his thirty-foot dive, they proceeded to swim under the boat and romp up and down the anchor line as if they had been born with gills instead of lungs.

When, an hour or so later, we weighed anchor and left the village, these merchildren towed behind us, skylarking in their waterlogged cayucas, and only consenting to leave us when I had passed out a double handful

carded matches.

Jo and I had now reached the decision that we must wind up our cruising under tropical skies. We had been in Panama nearly three months and had lived aboard Hippocampus just short of seven weeks, and various indications in the larder and elsewhere pointed to the wisdom of my getting home to a steady job. Never had we had more delightful or inexpensive cruising, but by the same token never had the days slipped so quickly into weeks and brought the day of reckoning so near.

Hence, we counted Rio Ciedras our last adventure into the unknown and, leaving it, headed the bow of Hippocampus toward Colon and home. There was literally not a breath of air stirring (despite the season this was our fourth consecutive day without a drop of rain) and the motor pushed us over a flat, burnished sea under a blazing hot sky. Reaching Porvenir, the San Blas port of entry, three hours later, we stopped only long enough to thank the officials there and bid them goodbye. Then, watching the passage closely, we threaded the barrier reefs and felt once more the deep roll of the Caribbean beneath us. We had just six hours of daylight to make the thirty open miles to Nombre de Dios, and although the Hippo may be counted on for her five and a half knots, hour in and hour out, there was a current against us and a dark harbor ahead of us.

Consequently, when the motor suddenly stopped from a clogging of the gas line I was irritated. And when a clogging of the gas line I was intraced. I crawled into the bilge to clean the pipe and the ground I crawled into the bilge to clean the pipe and the ground I was profane. But no more than fifteen minutes were wasted and within the next hour a gentle land breeze sprang up to requite the The next time the pipe clogged my tools were ready to hand, and we lost only five minutes, and the next-but there was no next time. Only the threat of it as the sun sank and with half an hour of daylight we

saw Nombre de Dios still four miles distant.

Yet here was plain sailing. We had entered the harbor before and knew the angles, and friendly old Bruja, a peak which rears its leonine head 3,000 feet above the sea, pointed the way. So, with motor wide open and sails filling first to starboard and then to port-we had no time to douse them then-we forged through the thickening darkness to our old anchorage off the ore railway. At the last a friendly lantern gleamed from the dock head and we knew that Onderdonck had sighted us as we rounded Cay Cuili and was standing by to welcome us. Our evening in Nombre was (Continued on page 90)



Hippocampus after being lifted to the deck of the S. S. Pastores

A. P. B. A. Elects New President

Frederick R. Still of Detroit and New York Succeeds the Late Albert L. Judson—A Yachtsman of Valued Experiences in All Branches of the Sport of Motor Boating

OMMODORE Frederick R. Still, former Detroit and now a resident of New York, who was selected by the American Power-Boat Association to don the mantle of the late Commodore Albert L. Judson, as president of the Association, is a motor boat devotee of twenty-four years.

Going back beyond his first motor boat in 1899 we find that Commodore Still was a wind jammer from boyhood

and as a youth was one of the expert cat boat sailors on Saginaw Bay, having spent his early years in Saginaw, Mich. After he came to Detroit, as a youth, he continued to sail in competition and one of his most prized

tition and one of his most prized collections is that of the flags that he gained scudding before the wind. Detroit's sailors tell many stories of Commodore Still's skill with his yawl Gloria, which antedated his motor boat victories and the races that he won by his knowledge of sailing, particularly as a

navigator.

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Not only did the American Power-Boat Association select a sportsman who has made his mark in competition but also one of the most efficient racing officials developed by the power boat world. He won his three stars as Commodore of the Detroit Motor Boat Club, a most active organization from 1907 to 1914. After the or-ganization of the Detroit Motor Boat Club no regatta in Detroit has been authentic unless Commodore Still was a member of the committee and usually he drew the chairmanship. He was three times chairman of the regatta committee of the Inter Lake Yachting Association and in 1913 in active charge of the Perry Centennial regatta at Toledo and Put-in-Bay. Since 1916, when Detroit had its first Gold Cup race, he has been chairman of the regatta committee for these events, except in 1919 when he was on a business tour in the Orient.

The new president of the American Power-Boat Association is one of the engineering authorities of the country and vice-president of the American Blower Co., of Detroit. He is recognized as one of the authorities on ventilation and this work has carried him to every quarter of the globe, designing ventilation machinery for mines, factory buildings, public institutions, naval vessels and especially the submarines. Being an engineer the power boat appealed to him both from a technical and

sport standpoint.

Commodore Still's first motor race craft was Nan, still remem-

bered in Detroit. It was in 1899 that he started motor boat racing with this runabout, which was 26 feet long and had a seven-foot beam. Her power was a single cylinder Sintz engine and she was built by the Michigan Yacht Power Co. In retrospect Commodore Still asserts that her

flywheel weighed almost as much as a modern marine engine and the speed which the six-horsepower engine drove the craft through the water was then unusual.

drove the craft through the water was then unusual.

When the Detroit Motor Boat Club was organized in 1907 Commodore Still put into commission Key West, and she won many championship flags and trophies. She was narrow where Nan was broad, boasting a 3½-foot beam and was 32-feet water line length. Her power was a three

and was 32-feet water line length. Her power was a three cylinder Smalley engine and her championship of the Detroit River gave her a mark of 22.1 miles an hour. Four years later we find the Commodore with a slow speed cruiser, cleaning

up this class. This was Laneta, 33-feet long with nine foot beam, and a four cylinder engine pushing her through the water at the tremendous speed of 8.5 miles an hour. This was the year of the Still fleet, for the American Power-Boat Association executive admits he owned the Key West, Nan, Laneta, two caroes, a row boat, cottage and three boat houses on the river front. The possibilities of steam power for motor boats interested Commodore Still and in 1914 with Robert Deming he surprised the Detroit speed boat fans with Cero. She had a steam en-gine taken from a White automobile and two boilers, showing a speed of 40 miles an hour. Later a six cylinder Sterling was installed in the Cero hull and with the gas engine she made 26 miles an hour. Cero, minus power plants is still in existence, and stored at the Belle Isle Boat & Engine Co. shops in Detroit.

Commodore Still removed to New York from Detroit on March 17 and will make Gotham his permanent home. For three terms he was measurer of the American Power Boat Association and his successor is still to be selected. When death called Commodore Judson and left vacant the office he had held for seven terms Commodore Still was unanimously selected as his successor by the Council of the Association. Detroit and especially the Detroit Yacht Club, of which Commodore Still has been a director for three years suffers in the loss of such a valuable executive, but the East and the national organization will be the gainer. Any yachtsman who can successfully serve as a race has the rare good judgment necessary for the office to which Commodore Still has been elected.

Throughout the ups and downs of the sport, the American Power-Boat Association has stood fore-

Boat Association has stood foremost as the originator of organized racing by compiling rules which have been the guide for conduct of all worthwhile events in America. They have been amended from year to year as occasion demanded. Today they are used by every organization, in whole or in part.



Commodore Frederick R. Still, recently elected president of the A. P. B. A. Commodore Still is one of the foremost motor boatmen of the country and with him in office all boating interests are bound to benefit



ish

ligi pla boa

the and

terior in full mahogany

cluded practically all of the material and fasten-

ings for the boat-frame-

work, planking, fenders, deck rails and awnings

decking, rudder, and steer-ing gear and all cabin work, including the fin-

The order as given in-

trim.

The heavy work on these seat parts has been done by modern machinery

cruiser of 45feet length.

After determiningthe

size he com-

missioned the Defoe Boat &

Motor Works, of Bay City, Mich., to prepare a

suitable hull for knock

down shipment and send it to him to be assembled at his Florida home.

of Bay



Interior joiner work and bulkheads all properly glued and dowelled together before shipment

before they are shipped. Door james, corner mouldings, carline facers, plugs for screw heads and all similar details are included as a part of the job.

All hull fastenings in this boat are of copper and brass, glass is all polished plate, and every detail worked out with as great care as for a finished boat job.

The method of building a boat as outlined in these paragraphs simplifies the work to a remarkable extent. All of the heavy trimming and cutting which would ordinarily be exceedingly laborious is performed by machinery and the labor element reduced to zero. When the material is delivered on a job of this nature it is ready to be assembled and after the fitting, is practically ready for the painter.

It is interesting to note how a complete knockdown boat can thus be worked out. This is only one of numerous such orders for complete K. D. boats which this company has turned out.

ished panelling for bulkheads and partitions, furniture, berth and seat front, plate glass windshield, skylight, portlights, and also power plant and propeller outfit, the power plant being a Scripps E-6, of 75 h.p., which will drive the boat 11½ miles per hour.

Mr. McGuire, whose home is in Chicago, is supervising the re-erection and completion of his boat at Fort Myers, and besides having the satisfaction of having the boat put together under his own eye, expects to effect a considerable saving by building his own boat from the knock-down.



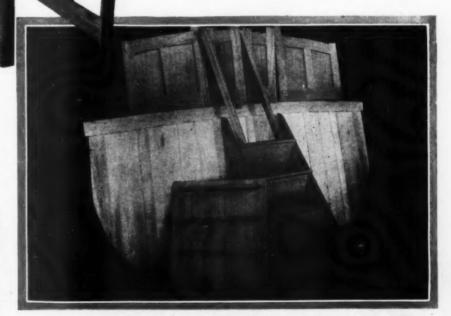
Some of the forward bulkheads and locker doors. All parts come of the proper dimensions and can be easily fitted

Side members of the deck house and the windows for same are completely finished and require merely to be lifted onto the deck

The actual work of completion is being done for him on contract by Ben Huskins, a former employee at the Defoe plant. Mr. McGuire is procuring all of the fittings and loose boat equipment for himself during his winter leigure.

self during his winter leisure.

All panel work, it will be noted, is mortised and tenoned according to the best standard practice, and all joints are pressed together on water-proof glue. Most of the panel sections as shown in the photographs have not yet been put through the sanding machine and therefore appear somewhat roughly surfaced, but all are thoroughly sanded

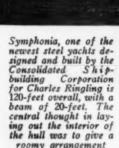


More of the interior joiner work and bulkheads hatches and companionway stairs are all prepared at the mill

Symphonia, a Steel Gasoline Cruiser

One of the Southern

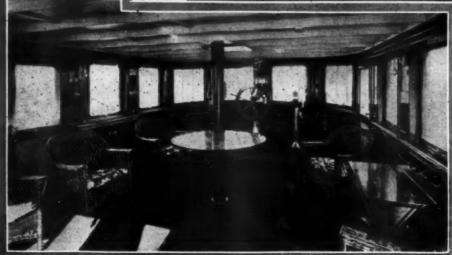
Most Recent Motor Cruising and Now Yachts Designed for Among the Fleet in Florida



roomy arrangement

Interior of the teak deck-house forward which includes the saloon and dining room further aft. The decorations and furnishings are in keeping with the general finish of the entire craft and are homelike and cosy





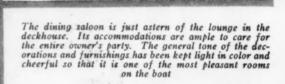
Over the deckhouse is the pilot house of which this is the interior. This is furnished with comfortable easy chairs and makes a wonderful lounging place to enjoy the beauties of the passing scenery. The steering location and control stand is placed at the forward end of the room as is customary customary



Symphonia as a whole is a modest yacht embodying all the modern features to make cruising a delightful recreation. The after-deck space is expansive and the furnishings restful and attractive. Ample deck space has been provided so that there will be no restrictions on outdoor life while aboard the ship

Symphonia's engine room is located amidships where two 8½ by 10-inch bore and stroke Speedway gasoline engines are installed together with all the auxiliary machinery. Among this will be found a capacious ice machine, electric generating sets, pumps, etc.

ser

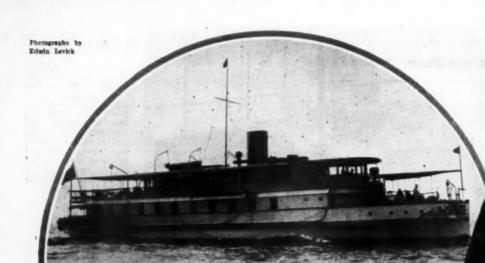


The owner's stateroom is very large
and contains all appurtenances required
in a luxurious sleeping compartment. Its
size presented many
opportunities for embellishment and decoration. It has been
simply treated with
colorful stripings
and tastefully arranged furniture.
The guest rooms are
equally well rendered
as are the several
other staterooms

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President Harding Goes Houseboat Cruising

The Nation's Chief Executive Takes a Well Earned Vacation and Selects a Florida Cruise as Most Beneficial



Interior of the luxuriously appointed deck saloon of Pioneer on which the President and a party of congenial friends are spending their winter vacation while cruising and golfing

Pioneer is a large roomy craft of 120-feet in length and 22-feet beam. She will be the home of the party while cruising down the Halifax River from Ormond, Florida and will visit all resorts en route during a leisurely cruise

Pioneer was designed and built by the Mathis Yacht Building Company at Camden, N. J. and more recently had a pair of Standard heavy duty engines installed. These are of the six cylinder type with cylinders 8½ x 11 inches and develop 150 h. p. each



Internat

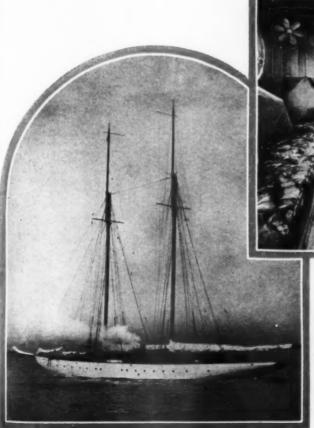




An Auxiliary Sea Going Vessel Just Completed and Powered With a Nelseco Diesel Engine

The Schooner Good Will







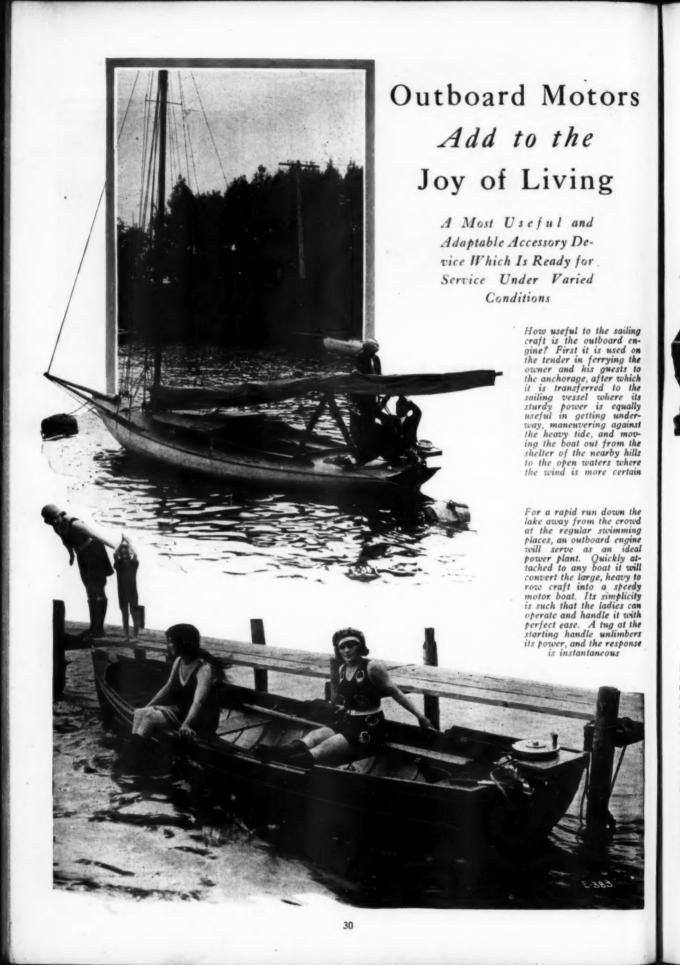
The interior appointments of Good Will are comfortable in the extreme. The deck house interior indicates the style followed throughout the entire vessel

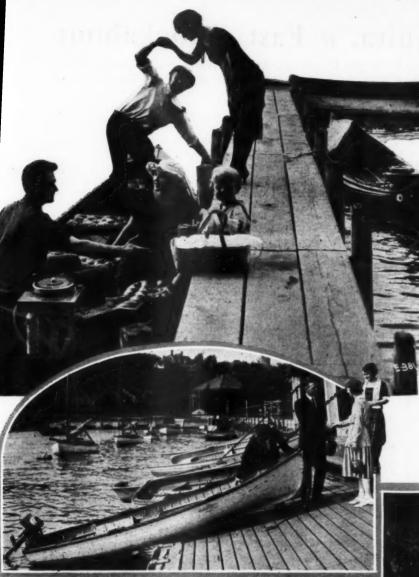
As an indication of the sporting proclivities of the owner, the gun rack shown contains all the gear required for hunting and fishing of every kind

A novelty in the appointments is the special carpet, in which the owner's private signal and club flag have been woven

Good Will is 162-feet overall and was designed by H. J. Gielow for Keith Spalding.

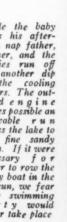
She is equipped with a Nelseco Diesel engine of 180 h.p.





The automobile has now become a tender to the yachting instincts of the family. An excursion into the country with the well filled picnic basket is an event looked forward to with joy. The car is loaded with the family, the lunch, and the handy outboard engine and away we go, away from the dust and dirt of the highways

Every well equipped yacht has use for an outboard engine in order to get in and out quickly from the landing stage to the yacht. The detachable power plant meets every requirement. Its tilt up feature permits of the boat being drawn up on the runway by an attendant without the necessity of removing the engine





Chiquita, a Fast Knockabout

Complete Design, Drawings, and Specifications for a Good Looking Speedy Little Boat With Limited Cruising Facilities

By John L. Hacker

Designed Exclusively for MoToR BoatinG

RESPONDING to a more or less persistent demand for a fast little boat which would have accommodation for several passengers for more than the ordinary day cruise, the design shown here was produced to fill the need. For a boat with moderate accommodations for three or four persons, this little knockabout runabout of only 23½ feet would seem to be most acceptable. Its speed has not been sacrificed to secure the space and accommodations which it affords, nor has seaworthiness been neglected in working out the details.

This little boat while only slightly over 23 feet long has an exceptionally wide beam. It is virtually an out and out runabout in every sense of the word, to which has been added the cabin for shelter. It is designed so that one can camp and live aboard without serious inconvenience for several days at a time or even undertake an extended cruise if one is willing to put up with a little inconvenience in the process. The cabin has full four feet of head room and the built-in seat on each side of the cabin space will provide fairly comfortable sleeping for two persons and if

the space between the berths is filled in a third person can be accommodated quite readily. There is ample space underneath the seats for the storage of baggage and other gear and a small locker can easily be built in on either side for the storage of the crew's shore clothes. If desired, a small toilet could be installed in the forward portion of the cabin.

The provision for the hatch in the forward part of the deck allows for ample ventilation and also serves as an excellent place from which to handle lines, etc., without the danger of falling overboard. In the cockpit, a built-in seat provides for the operator and a companion, while the space underneath this seat can be arranged as an ice box quite readily by the installation of doors opening into the after part of the

cockpit space and by providing a metal lining. It can be so arranged that the ice is placed inside through a cover under the seat. The cockpit space has been left open deliberately so that chairs may be carried when desired and left at home when not wanted. There is sufficient space for two or three small chairs and the folding type will easily double the seating capacity of the boat.

At times when the boat is being used for fishing or other sport purposes, the extra cockpit space will be found to be most desirable.

For shelter against the sun or rain a top of the automobile type or of the military type may be easily supplied. In this type the bows are fixed and a canvas can be put on in a few moments' notice. A windshield can also be applied if desired. This little boat is so arranged, that while it was designed primarily as a runabout it is also acceptable as a cruiser, so that it is possible to get out to the best fishing grounds on the day before and get the best of the early fishing by being on the job when the fish wake up. The possibilities of a boat of this kind are great and there is no limit to the variety of purposes to which it can be adapted.

With the speed which is expected of at least 20 m.p.h. if should make a very desirable and acceptable outfit.

The lines on this little boat have been very carefully worked out so that it will make an exceptionally seaworthy little job. The construction should not be made any heavier than the specifications which follow call for, as the designer has provided ample strength in all parts to insure a good job. It will be necessary to exercise sufficient care in the construction so that a first class job will result. Materials of light weight, while they have the requisite strength, must also be more carefully handled than heavy materials, so that the resulting job will be first class in every particular. The boat is a good husky little craft and will stand up in fairly heavy weather. This does not mean, however, that it is intended as an ocean going cruiser and the design is not adapted for such severe service. If a boat is wanted which is adapted for ocean going service, the designer should be consulted for advice in the direction of strengthening the hull in certain directions, as increased strength comes from skill in the design.

The motor called for is the popular model 50 Kermath, four cylinder of 43%-inch bore and 51/2-inch stroke. It is intended that this motor should run at about 1,400 revolutions at which it will deliver about 50 h.p. This power is produced on a weight of only 700 pounds and is sufficient to move this boat at better than twenty miles. Many new features are incorporated into the design of this machine and it is very certain that it will give excel-lent service in the same fashion as all previous Kermaths have done.

This design has been very carefully worked out, and a first class boat can be built by following the design as published. It is not advisable for amateur builders to begin to change the lines, dimensions, or proportions of the hull or believe that they the designer by doubling the

can improve on the work of the designer by doubling the sizes of all material. As called for, all material is amply heavy and strong for its intended service. If you are in the market for a tow boat, do not attempt to build one from these plans. Should any difficulty be found in proceeding with the work of building this boat, a request to the Editor or to the designer, John L. Hacker, at Detroit, will bring prompt help. Many of the fittings which the designer calls for in these specifications are being manufactured to his order and can be secured directly from him. While it is true that practically all dealers in marine hardware and boat fittings can supply acceptable articles, it might be best for prospective builders of this boat to consult with the editor or the designer on the subject. specifications which follow are very complete and cover the construction of the hull thoroughly from beginning to The construction of the boat will follow general practice in this regard and its completion according to the design should result in a very satisfactory little cruising runabout. While a clever amateur can undertake its construction a shop will be able to turn out a better boat.

Designs in this series which have been prepared by John L. Hacker, and which have appeared in previous issues of MoToR BoatinG include the following popular boats:

January, 1922 Marybelle, 14-foot runabout

February Gladys, 20-foot runabout
March Margie, 31-foot cruiser
April Miss Victory, 22-foot hydroplane
May Miss Mississippi, 17-foot hydroplane
June Miss A. P. B. A., 26-foot runabout

July Lorraine, 16-foot runabout
August Flapper, 18-foot runabout
September Fleetfoot, 22-foot runabout
October Irene, 28-foot speedabout

November Priscilla, 21-foot 6-inch monoplane

January, 1923 Anita, 17-foot runabout
February Suzette, 22-foot runabout
April Chiquita, 23½-foot knockabout

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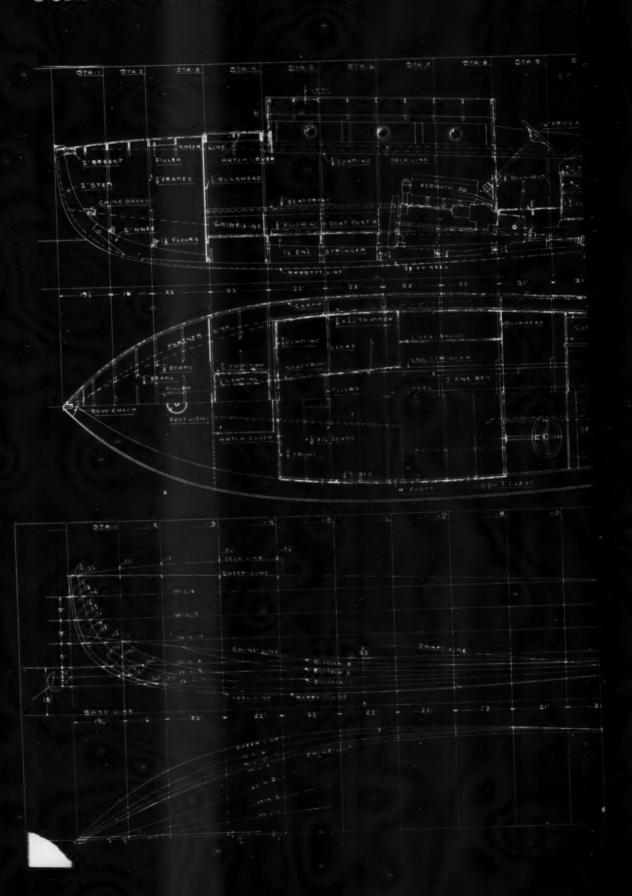
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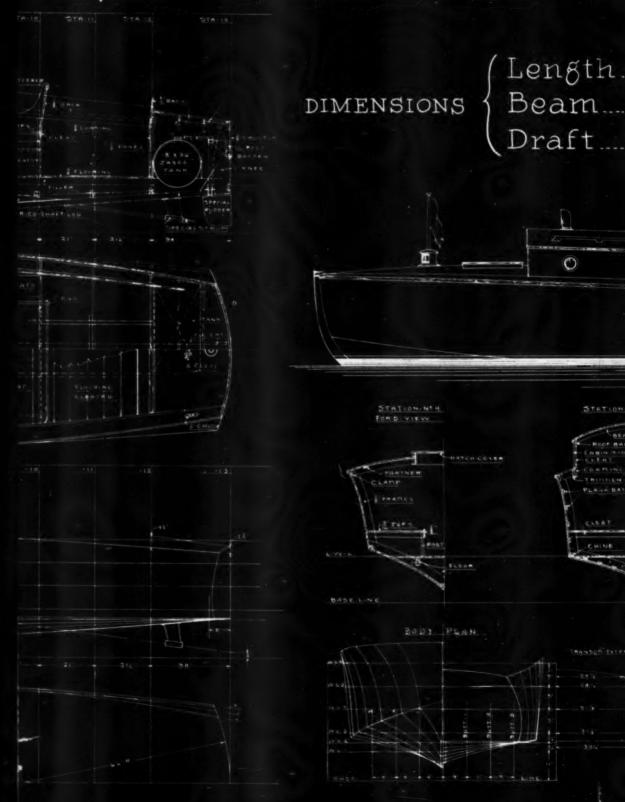
Designed by John L. Hacker

MoToR Bo CH



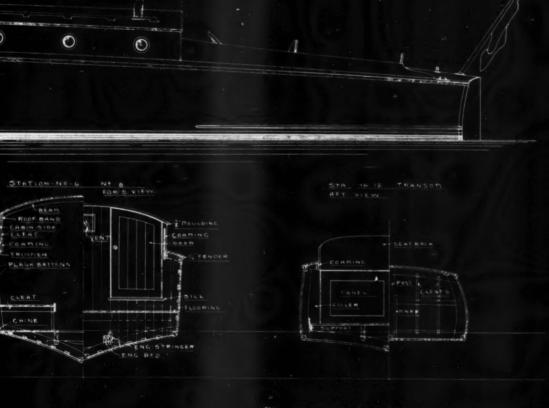
ATING'S BUILD A BOAT IQUITA - A Fast Knockabout

Complete How to Build Plans



T Series





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General Specifications

The general dimensions of this little boat will be: Length 23 feet 6 inches, beam 6 foot 6 inches, freeboard at the stem 2 feet 11 inches, freeboard at the stern 2 feet 0 inches, and the draft 2 feet 0 inches.

Keel: This member is to be shaped from a piece of 2½ by 4-inch white oak or yellow pine preferably in a single length. It is to be properly beveled and rabbeted to suit the planking. Stem and Knee: This is to be shaped from a piece of 2-inch white oak and securely fastened with at least three ¾-inch bolts. It is to be properly beveled and rabbeted and fastened to the keel with four 1½ inch bolts of the which the rabbeting to the keel with four 36-inch bolts after which the rabbeting is completed.

Transom: The transom is to be of the curved type, with the upper and lower members sawn to a proper radius from 3-inch white oak or ash stock. The stern post is to be 11/4. by 4 inches with the upper and lower members halved into it.

The side members will also be of oak 1-inch thick and similarly halved into the upper and lower members. It is further to have two 3/4 by 2-inch cleats on each side to reinforce the covering. Trim and bevel properly and cover with two pieces of 3/4-inch mahogany. Insert a 7/16 by 13/4-inch batten to take an oak or hackmatack knee on each side, fastened to the side of the post and kneel.

Frames: Frames are to be made from natural hackmatack knees and are to extend from keel to the deck. They are to be tied with an oak floor of such a size as is indicated. If hack-matack is not procurable, light oak or ash may be used in which case a side and bottom member will be fitted and tied the same manner as mentioned. Frames are to be of 76-inch stock and approximately 3 inches on the bottom tapering from 3 inches to 2½ inches on the top at the sides. They are to be fastened at the knuckle with either bolts or copper rivets, use five 3/16-inch bolts or No. 8 copper rivets. Fasten frames to the floors in a like manner with at least six ¼-inch fastenings on each side. All the floors are to extend about 3 inches outside of the stringers.

Chines: These are to be shaped from 2 by 2-inch white oak or yellow pine in a single length. They are to be properly beveled and rabbeted to suit the planking. They can be slightly beveled and rabbeted to suit the planking. They can be slightly tapered toward the stem and are to be let into the frames and securely fastened with 2½-inch screws from the side and bottom. They are to be reinforced at the stem with a substantial breasthook and at the stern with a knee on each side of the transom frame.

Engine Stringers and Bed: The stringers are to be shaped from 1½-inch aero spruce or pine. They are to be let in over the frames and through bolted to the floors with 5/16-inch bolts. They are to be spaced to suit the motor which is to be installed so that it will fit in between them. The engine bed is to be of 2-inch oak or ash and aligned to suit the motor. They are to be notched in over the frames slightly and to be bolted to the stringers every 8 inches, and drift bolted into the floors. The stringer and engine bed, as shown on the plans, are spaced and aligned to suit the model 50 Kermath.

are spaced and aligned to suit the model 50 Kermath.

Clamp and Plank Battens: The clamp is to be of 36 by 2½-inch yellow pine preferably in a single piece. It is to be let into the frames and securely screw fastened with 1¾-inch screws. It will have a 2-inch breasthook forward and a knee on each side at the transom. Plank battens are to be ½ by 1¾ inches on the sides and 9/16 by 2 inches on the bottom. They are to be of yellow pine or oak and in a single length. They will be let into the frames and screw fastened with 1½-inch No. 9 screws. They are to be spiled evenly on the sides and so that the two outside battens will check into the chines. They are to be so arranged that the plank seam will meet the centers are to be so arranged that the plank seam will meet the centers of the battens.

Frame - in - General: The entire frame is to be trimmed and faired in readiness for the planking. All joints made are to be well painted with lead paint before making the final fastenings. All galvanized bolts, etc., are to be painted with red lead paint and where exposed to be wood plugged.

Planking: The planking is to be of white cedar, white pine, or cypress, and to be ½-inch thick on the sides and 9/16 inches thick on the bottom. It is to be in as long lengths as possible and all butts are to be made of oak butt blocks not less than 8 inches long and to have eight fastenings on each side. All planking is to be spiled so that the seam will meet on the cenplanking is to be spiled so that the seam will meet on the centers of the battens. The planking is to be screw fastened into the frames with 1½-inch screws. Screws to keel and chine may be 1¼ inches and to the clamp, 1 inch. The planking is to be copper riveted to the battens with 2-inch copper wire nails over burrs. All holes are to be counterbored with a Forstner plug bitt and wood plugged. If a natural finished hull is to be used, mahogany may be used for the planking in the same thickness as specified and fastened in the same manner.

Deck Beams and Framing: The main deck beams are to be % by 2 inches and the intermediates ¾ by 2 inches. They are

all to be of white wood and screw fastened to the frames and clamp and further supported with a knee which is to extend to the second batten on the intermediates. The beams on stations 2 and 3 to be $2\frac{1}{2}$ inches in depth as also the one on station No. 12. The hatch trimmer is to be 34 by 2½ inches and the coaming trimmer 36 by 2½ inches. Deck beams aft to be the same as those forward.

Decking: There will be covering boards of mahogany thick the same as those forward.

which are to be screw fastened to a ½ by 1¾-inch partner which shall be let into the beams. Fasten temporarily and which shall be let into the beams. Fasten temporarily and then cover the deck with white pine strips 6 inches wide, making a seam on a ½ by 1½-inch batten, the center plank being of %-inch oak or mahogany. All decking is to be 7/16 inches thick thoroughly dressed and sanded. Covering boards can later be removed and all holes in decking filled after which it can be covered with light canvas duck, laid in heavy paint or marine glue. Apply a coat of paint and then fasten covering marine glue. Apply a coat of paint and then fasten covering boards permanently and fill before applying more paint. Decking may be fastened with galvanized nails, with screws to partner and clamp. The covering boards are to be wood plugged.

There will be a bulkhead on Station No. 3 to be Bulkhead: made of 7/16-inch ply wood, or to consist of two thicknesses of ¼-inch white pine with a layer of canvas duck between which should be laid in marine glue. This is to be laid diagonally in opposite directions and copper clinch fastenings every 2½ inches and screw fastened to the framing. The bulkhead is to have ½ by 2½-inch cleats and to provide framing to allow an opening of approximately 18 by 18 inches for access in cases of emergency.

Cabin: Cabin is to be built as per plans with a %-inch coaming which shall extend 1½ inches above the covering board on the sides and forward. The cabin sides and front are to be of ½-inch stock screw fastened to the coaming. A cleat must be provided in each corner for the cabin sides to fasten to. There will also be a 9/16 by 2½-inch roof band on each side and supporting cleats to form a panel as indicated on the drawing. The cabin end is to be suitably framed and to be built up of 7/16 by 2½-inch T & G sheating. This is to extend down to the floor and to be fastened to a substantial cleat. Provide an opening 18 inches in width for a door as indicated on the drawing. There will be a cleat on each side to form the jambs and sill as per plan. The door is to be of the paneled type with \(\frac{\gamma}{3}\)-inch styles and \(\frac{\gamma}{4}\)-inch ply wood panel. It may also be made of other material similar to the cabin house. There should be a strong cleat in the vicinity of the steering gear and another cleat on each side to take the the steering gear and another cleat on each side to take the seat. The cabin beams to be \(\frac{9}{2} \) by \(\frac{1}{2} \) inches sawn to the proper radius and notched into the roof band and screw fastened. A filler should be supplied for the ventilator. Cabin top is to be decked over with \(\frac{3}{2} \)-inch white pine T \(\frac{8}{6} \) G stock. Finish the beams as well as the ceiling before it is applied. Fastenings may be galvanized nails. When finished, dress and sand well, paint, and then cover with regulation auto top material laid on wadding. This material can be secured with a \(\frac{7}{2} \)-inch half round molding all around. If preferred, the regulation canvas decking may be used, the other material, however, is recommended. Cut holes for three 4-inch regulation ports on each side with two forward. The after end of the cabin may have a port or be fitted with an opening not less than 6 inches square in which is inserted a fine mesh bronze than 6 inches square in which is inserted a fine mesh bronze gauze in a frame to allow ventilation. The flooring is to be laid on suitable backing as called for on the plan, the center plank being removable. There will be seats on each side as indicated fitted with a 5½ by 3½-inch front and cleated to a frame to form the height, supported with a post where indicated. The seat tops can be of 9/16-inch pine. The seats are to have solid ends and sides so as to form a locker. A filler may be provided to fit in between the seats to provide more sleeping space if desired. It should be so arranged as to store readily when not in use. Arrange a hatch cover as indicated on the plans. This is to be hinged to swing aft and procated on the plans. This is to be hinged to swing aft and provided with a quadrant to hold it in place. This hatch is intended for handling lines forward and may be opened for venture. relation also in which case a screen may be opened for ventilation also in which case a screen may be inserted. When applying the coamings, fit them closely to the trimmer and lay a strip of cotton flannelette in marine glue to make a watertight joint, and screw fasten the coaming.

Cockpit: This is to be arranged as per drawings. have a forward seat with side pieces extending from side to side. It is to be arranged with seats for three passengers, the side. It is to be arranged with seats for three passengers, the balance to be in the form of a step with removable cover for storage. A suitable ice box may be arranged under the seat with a door opening aft, which can be filled through the top The flooring is to be as indicated on the plans and to be supported with cleats to the stringers. It is to be made in three removable sections with the two outside ones fastened with screws. The after flooring is to lay thwartships, and is to be supported on both ends with a riser fastened to the frames.

(Continued on page 128)

Engines for Fine Pleasure Craft

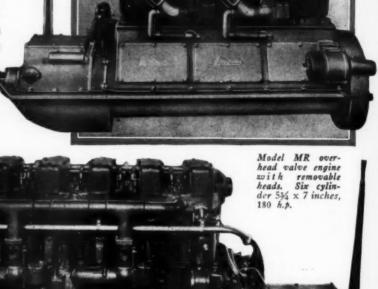
The Development of High Power Internal Combustion Engines Keeps Pace With Progress in Boat Construction

MONG the gasoline engines in the marine field worthy of particular mention are those designed and built by the Consolidated Shipbuilding Corporation, Morris Heights, New York City.

Here we find a boat building organization, primarily, who conceived the idea back in the early days of its organization, that undivided responsibility in the production of fine pleasure craft was the keynote to success. Back there when the internal combustion engine became a

reality for motive power. Con solidated discarded their old naptha engine, and turned their ende a vors toward the design of a new gasoline inter nal combustion engine, and pro-duced it under the

trade name of Speedway. The requirements for boats of different lengths, weights, and particular service, necessitated the production of many models with as many different weights and horsepowers. As time went on, Consolidated being designers and builders of both hulls and engines, they were in a unique position to secure the very best experience possible. As a result, as fast as one model



The dual value 300 h.p. model R six cylinder engine

became obsolete it was discarded, and they developed a newer, more refined and up-to-date model to take its place. While Consolidated may have produced new models from time to time to fulfill a particular duty in boats of

their design, nevertheless they have contributed much to the pleasures and stability of Yachting as one of the fore-

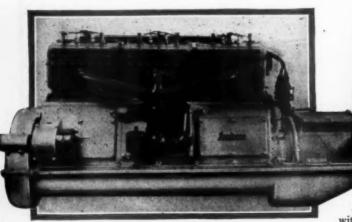
most American sports of the present day.

For many, many years, Speedway engines were almost exclusively built for installation in Consolidated-built boats. Of late years, however, the facilities for building these motors have been increased, and with a modern system of handling, their capacity for output has been increased 300 per cent. To facilitate the sales of engines the firm of A. G. Griese, Inc., has been appointed Sales Representative of Speedway engines for the entire United States, with but one or two localities excepted.

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The Speedway engine line comprises 12 models and ranges in horsepower from 22 to 300, a range that is capable of fulfilling every kind and class of service. This year, Consolidated again stepped for-ward with their new Model MR, pat-

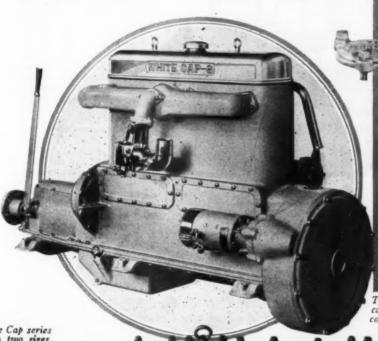
terned after their Model M, that popular engine about which we hear so much favorable comment. The MR is an overhead valve engine with removable heads, built in six cylinders with aluminum base and frame, developing 180 horsepower at 1,300 r. p. m. This engine forms another unit to Consolidated's line, and made its bow at the show.



The smaller model M, also a six cylinder suit 53/4 x 7 inches of 150 h.p.

A Clean Cut Engine

New White Cap Motors Just Brought Out by the Wisconsin Motor Manufacturing Company



The strainer is readily accessible and can be cleaned without disturbing any connections. Ample capacity is provided

The White Cap series is built in two sizes, four and six cylinders each of 4-inch bore and 5-inch stroke developing from 25 to 40 h.p. in the four and 30 to 50 in the six, according to the rate of speed

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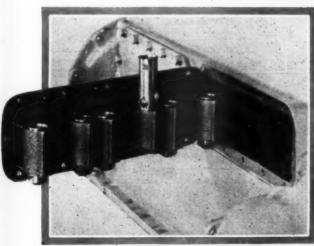
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All valves are of the overhead type and operated by push rods from the camshaft below. Oil is supplied through the rocker arms from the pressure oil system



Valve tappers which operate the overhead rocker arms are mounted on removable plates bolted to the crankcase, six being in the group on each plate



Camshaft and magneto drive shaft is driven by a silent chain drive with an automatic tension take-up which keeps the chain tight at all times. This insures quiet running with no slack in the chain

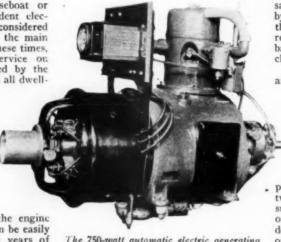
An Efficient Lighting Plant

Serviceable Electric Generating Set Well Adapted to Yachting and Marine Requirements

POR the cruiser, houseboat or auxiliary an independent electric generating set is considered of as much a necessity as the main power plant. There is in these times, a demand for electric service on boats which has been bred by the availability of electricity in all dwell-

ings. A small plant of 750 watts' capacity is being made by the Stearns Motor Manufacturing Company of Ludington, Michigan, which is exceptionally well suited to this service. This little machine is rugged and substantial in every part There are very few

actual wearing parts on the engine and generator and these can be easily replaced after five or six years of service. A plant of this kind does not require skilled attention, in fact, it can be operated by a child, if neces-



The 750-watt automatic electric generating set made by the Stearns Motor Mfg. Co. is a modern machine in every particular

sary. The charging rate is controlled by an automatic electric governor so that just the required amount of current is produced which prevents the battery from being overcharged, or charged too rapidly.

The rotating parts of the engine are well balanced so that there is practically no vibration. All parts are kept in proper ailgnment by machine fitting. The cooling of the engine is by a thermo system which insures a quiet plant, as there is no pump to become noisy as the plant gets older. The generator is also made by the Stearns Com-

also made by the Stearns Company in their own plant and is of the two-pole compound wound type of such ample proportions that it never overheats. For the main bearings, double row ball bearings are provided on the crankshaft. These are at least twice as large as are generally considered necessary, resulting in a long life without adjustments.

A Sea-Going Home

More Recreation and Pleasure to Be Had by Life on a Cruiser Than in a Summer Cottage

THE thought has occurred to many people that more recreation and pleasure can be obtained from a crusi-For a power plant, it is intended to install two of the w six-cylinder Scripps engines. This will insure the new six-cylinder Scripps engines. This will insure the utmost reliability and a speed of from seventeen to eighteen miles. The operation of these ing boat by using it as a summer home rather than being located for several months at an immobile summer cottage. A striking example of a modern summer home is shown machines will be controlled entirely in the new 45-foot Great Lakes cruiser which is now buildfrom the steersman's position on the bridge deck of the vessel so that it is actually one man controlled. The boat ing at their plant for James Harris, Jr., of Cleveland. This boat possesses the seaworthy qualities that insure safety under all weather conditions, and in addition, the will be used on the Great Lakes this comfort which is afforded by the arrangement plan with the generous beam as well as the exceptional speed summer and then cruise South for the next winter season. expected. 0 0 0

Profile and arrangement of a 45-foot Great Lakes cruiser to be powered with two six-cylinder Scripps engines

SMALL MOTOR BOATS

Their Care, Construction, and Equipment

A Monthly Prize Contest Conducted by Motor Boatmen

Questions Submitted for the June Prize Contests

Describe fully one or more tried out methods of successfully repairing cracked water jackets.
 (Submitted by J. F. C., Providence, R. I.)

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As a guide to prospective amateur boat builders, describe the qualities and advantages of various woods generally used for this purpose. (Submitted by T. B. K., Bronx, New York)

Do This Before Starting the Engine

Systematic Routine to Be Followed in Tuning and Checking Up the Operation of the Engine When Starting for the First Time

Answers to the following question published in the February Issue "Describe a systematic method of tuning up and checking over the operation of the engine when first starting up after a winter overhauling"

Correct Engine Tuning Schedule

(The Prize Winning Answer)

RELIMINARY to the initial running of an engine after the winter layup period it is advisable to check over entire installation, such as-all moving parts, bolts, nuts, keys, gaskets, reverse gear, couplings, bearings, gasoline tanks and line, carbureter valves and floats, lubricators and leads from, valves and timing of ignition wiring and timing, water circulating system, and check valves When temporary adjustments are made and everything is apparently O. K.-turn on gasoline, ignition and lubricators, retard spark, prime and start. Run slowly with clutch out, and watch carefully for overheating, pounding, missing leaks, sticking valves, poor water supply, poor labrication, or any suspicious noises. Remedy all faults immediately, and make slow speed adjustments on carbureter and igni-

Stop engine after a few minutes running, examine bearings for overheating and when everything is O. K. take a short run around the harbor, or tied up to a wharf, so that final adjustments for high speed can be made. Watch for signs of misalignment, and if any, stop and correct. Take about an hour's run at slow speed, make all final adjustments or repairs, and you are then ready for the season's

Do not overload the engine for the first two or three trips, which should preferably be short ones, so as to get the engine gradually worked in. Overloading engine while everything is tight throws a tremendous strain on all working parts, and causes undue wear or breakage; therefore, the best plan is to take it easy at first.

Various troubles which an engine is liable to suffer from, and the most suitable remedies are grouped in the tabulation which follows:

Bearings

Bearing too tight-place liners in be-Binding tween upper and lower bearing halves until required clearance is obtained. Shaft or pin out of round—if bad take out and either renew or turn up on a lathe. If only slight, smooth off humps with file. Shaft or pin out of line—change the alignment. Shaft or pin bent-replace or straighten.

Renew bearing, pin or shaft, or if bearing is adjustable, take out sufficient liners from between bearing halves until required clearance is obtained. Lack of lubrication or rough shaft or pin. Clear out and adjust oil feeds or smooth up pin or shaft.

Bearing binding-see remedy above. Bearing loose-see remedy above. Poor lubrication. Clearing oilers and pipes and adjusting to correct amount. Pin or shaft rough, out of line, or bent-replace smooth up, line up or straighten.

Cylinders

Leaky gaskets-gaskets blown-gasket Water in defective—replace gasket. Water back-ing up from exhaust pipe—try running with water cut off from exhaust or run water into exhaust at lower place in line. Can be caused by vacuum in underwater exhaust line and is easily remedied by running a quarter inch line above water from the highest place in exhaust line. Water in base splashed up on piston which carries it up into cylinder—generally caused by water pump or pipes leaking into base or around bearings—stop the leak. Cracks or pin-holes in casting—plug with cement, small pipe plugs sawed off flush or by brazing-welding on this work makes a poor job.

Leaks outside Leaking gaskets-replace or tighten. Leaking pipe joints—tighten or renew.

Cracks or pin-holes—plug with cement or pipe plugs, or braze. Flanges or heads not true—replace or reface.

Poor water supply or trapped by air or steam bubbles — find trouble and or steam bubbles—had trouble and after water supply is O. K. see if air is leaking into pump and that the water comes up on a gradual rise to water intake on cylinders, also that the overflow from the engine comes out of the highest portion of the cylinder heads, otherwise the hot water will trap itself. Gaskets covering circulating parts—replace gaskets. Sediment in water jackets or pipes-clear it out with a piece of wire, water pressure or steam. Poor lubrication-wrong adjustment or pipes clogged. Cylinders out of line with crankshaftor pipes clogged. Cylinders out of line with crankshaft—line up. Overload caused by bearings too tight—loosen bearings or run in until they fit. Rings too tight—replace or refit. Clogged exhaust line or muffler—clean out. Propeller too large—replace. Ignition timing too late—advance spark until engine knocks, then retard slightly. Incorrect carbureter adjustment—adjust. Pistons too large -ease off a little with file or emery or in lathe. Cylinder

Rules for the Prize Contest

A NSWERS to the above questions for the June issue, addressed to the editor of MoToR BoatinG, 119 West 40th St. New York, must be (a) in our hands on or before April 25, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses.

The name will be withheld and initials used.
QUESTIONS for the next contest must reach us on or before April 25. The editor reserves the right to make such changes and suggestions in the accepted answers as he may deem necessary.

The prizes are: For each of the best answers to the questions above, any article or articles sold by an advertiser advertising in the current issue of MoToR BoatinG of which the advertised price does not exceed \$25, or a credit of \$25 on any article which sells for more

than that amount. There are two prizes—one for each question—but a contestant need send in an answer to only one if he does not care to answer both.

For answers we print that do not win a prize we pay space

For answers we print that do not win a prize we pay space rates.

For each of the questions selected for use in the following month's contest, any article or articles sold by an advertiser advertising in this issue of MoToR BoatinG of which the advertised price does not exceed \$5, or a credit of \$5 on any article which sells for more than that amount.

All details connected with the ordering of the prizes selected by the winners must be handled by us. The winners should be particular to specify from which advertisers they desire to have their prizes ordered.

small at top—grind out or take surplus metal out with bearing scraper or by lapping with ground glass with a dummy piston.

Valves

Sticking

Stems too tight—ease off with file or emery cloth. Carbon on stems—clean off by scraping and kerosene. Stems drv—lubricate with lubricating oil and kerosene, half and half. Guides overheating—poor water circulation. Springs weak or broken—replace.

Leaking Stems worn or too small — replace Past Stems valves or guides.

Noisy Improper adjustment of tappets, or tappets worn—adjust to thickness of visiting card, or replace tappets. Cams worn or loose—

replace or tighten.

Pistons

Hot or sticking
No lubrication—pipes stopped up or no oil. Pistons too large—cut down with file, emery cloth or in lathe. Rings too large—refit or replace. Crankshaft out of line with cylinder bore—line up correctly.

Slapping Piston too loose in cylinder—requires new pistons of correct size.

Knocking

Pistons sticking at top of cylinder bore due to bearings rebabbitted throwing piston higher in cylinder—ease out top of cylinder bore with bearing scraper or similar tool until fit is obtained. Loose wrist-pin which is striking cylinder walls and is scoring same. Fasten wrist-pin securely.

Leaking past

Rings stuck—remove and clean. Rings do not fit—replace or refit. Piston too loose—replace. Cylinder warped or worn out of round—regrind or rebore and fit new pistons and rings. No lubrication—pipes stopped or no oil. Cylinder scored—replace, grind or bore and fit new piston and rings. Pistons cracked or have holes in them—replace.

Gears

Hot Set up too tight—loosen. Out of line — line up correctly. Shaft or pin sprung—straighten or renew. No lubrication—pipes clogged or no oil.

Noisy

Set up too loose—set up correctly. No lubrication—pipes clogged or no oil.

Out of line—line up correctly. Shaft or pin sprung—straighten or renew.

Flywheel

Pounding
Loose key—refit and tighten. Bored too large for shaft—rebore and bush.

Nut loose—threads stripped or needs tightening.

Wabbling Bored too large—rebore and bush.
Crankshaft bent—straighten or renew.

Water Pump

Noisy Lost motion in gears, vane, plunger or eccentric—adjust or renew. Give it a

little lubrication.

No water

Valves stuck or worn out—loosen up and fit or renew. Valves installed wrong—install correctly. Packing needs renewing—renew. Vane, gears or plunger worn so there is not sufficient suction—renew. Ports or pipe clogged—clear them out.

Ignition

Missing or Loose or broken wires—tighten or reStopping place. Wires water or oil soaked—
renew. Defective or dirty spark plugs—clean or replace. Incorrect spark gap in spark plugs—adjust to thickness of thin dime or slightly less. Timer or distributor does not make contact—clean out, adjust or replace contacts. Contacts stuck or set too far apart—smooth up and readjust, about 15/1000 of an inch. Coil burnt out—replace. Set screw or key fastening timer or distributor to shaft loose—tighten or refit. Weak battery—renew or recharge. Dirty switch—clean or renew. High and low tension wires run-

ning through metal tube touching one another—causes current to condense—keep one-half inch apart.

Motor Hard to
Start or Sluggish
Start or Sluggish
Soaked, see above remedies. Timing set too late—retime.

Electric Starting Equipment

In case of trouble with either of these, see that lubrication is right; as too much oil will short-circuit and too little oil will cause squeaks or burned out bearings. Look over the gearing or drive and that it is working properly. Make sure that all adjustments as specified by the manufacturer have been made, also that all connections, commutator and brushes are in good shape and clean. If you still have trouble call in a good electrician or send back to factory.

Carbureter

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Flooding Waterlogged float—dry out and give three coats of shellac. Float arm bent—straighten or renew. Intake valve leaks—renew. Intake valve stuck—clean.

No gas

Valve in gas line closed—open. Air vent in carbureter or tank closed—open. Gas line clogged—blow out and clean or replace. No gas in tank—remedy obvious. Carbureter intake valve stuck in close position—clean. Tank too low to feed to carbureter—raise tank to proper heighth, at least 6 inches.

Poor mixture

Adjustment wrong—correct. Air leaks in carbureter or intake manifold plug. Air valve stuck or spring weak—adjust or renew. Float arm sticks on pivot pin—ease off or clean, or replace with one of proper size.

Reverse Gear

Hot Slipping—adjust or replace worn parts.
Out of line—line up. No lubricant—
follow manufacturer's orders and give it plenty of lubricant
at regular intervals. Adjustment on reverse band too tight,
causing band to drag—loose adjustment.

Noisy

Bearings loose — adjust or renew.
Shafts sprung—renew or straighten.
Gears worn—replace. Thrust worn or out of adjustment—
adjust or renew. No lubrication—lubricate.

Slipping Lubrication in between bands—squirt a little kerosene on bands. Adjustment not tight enough—adjust. Gear too small for engine—replace. Cone, expander or dogs worn—replace.

Exhaust Manifold and Piping

Exhausts, either above or underwater, should be amply large to allow the cylinders to rid themselves of the burnt gases, and should never be of smaller diameter than that of the exhaust valves; in fact, it would be better if they were one and one half times the exhaust valve diameter. All sharp angles should be avoided, and only necessary bends made. It is best to pipe only sufficient water to turn into steam in order to avoid back pressure in the line, and the water should be connected with the exhaust line at least six inches from and below the last cylinder, so the water will not have a tendency to get on any of the exhaust valves and rust them. Piping the exhaust out at the stern is no doubt the best place, and it should preferably be above water. Underwater exhausts should be of the inverted scoop type, and should not be more than six inches under the water at any time. It is always best to have an auxiliary above water exhaust from the highest part of the line, so as to stop vacuum pulling the water back into the cylinders. Mufflers and expansion chambers should be of ample size, and should be installed as close to the engine as possible. Adjustable mufflers are the best type, as one can set them according to the demands of the engine. Any part of the exhaust system coming into contact with, or in close proximity to, any part of the hull or woodwork, should be covered with a good fireproof material. All joints should be well made up with linseed oil and graphite, so there is no possibility of leakage, as gas leaking from the line into the

cabin is deadly poison.

And now, Bon voyage. V. L. S., Wilmington, Del.

(Continued on page 142)

Finishing Off the Exhaust Pipe

Several Ingenious Methods of Disposing of This Troublesome Detail So as to Make a Water Tight Joint

Answers to the Following Question Published in the February Issue

"Describe and illustrate best method of keeping water tight the joint between exhaust line and planking when the pipe leaves the hull at or near the water line"

Exhaust Pipe Stuffing Box

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(The Prize-Winning Answer)

POR a water-tight connection, it is better to provide a stuffing box fitting, where the exhaust pipe comes through the planking, rather than a pipe flange bolted fast to the planking, to take care of the expansion and contraction of the pipe, permitting the pipe to slip through the fitting as necessary.

The standard fittings used for propeller shafts are too heavy for this work, and do not present a neat appearance, but of course can be used. A lighter and neater one can be made along the lines of the one illustrated herewith.

The principal parts are the two brass flanges which can be made, or if you can secure the right size deck or mast plate to fit the exhaust pipe, these can be used, saving some work. It is not hard to make a pattern for this plate, and the castings can be finished with a file sufficiently accurately for this purpose, so no machine work is required outside of drilling. Both are from the same pattern, the only difference being that the holes are countersunk in one flange.

At the correct point, reinforce the planking inside with an oak block, with a canvas gasket well coated with white lead between, and fasten with a few brass screws to hold it in place. Bore the exhaust hole and coat it with white lead. This hole to be a tight fit for the sleeve of the flange. To make a better job, bore the hole to fit a liner (a thin brass tube) into which the flange sleeves will fit. Solder this liner to the sleeve of the outer flange. This liner is not necessary, but if easily secured, it will make a better chamber for the packing, keeping it away from the wood. Use a canvas gasket between the outer flange and the

Use a canvas gasket between the outer flange and the planking, coated with white lead, and fasten the flange with flat head bolts, having nuts and washers inside, countersunk flush with the inner face of the reinforcing block. The bolts project beyond this block, and hold the inner

flange by means of another set of nuts. Use asbestos cord or regular packing about 1/4" square, and draw the inner flange up fairly tight. It is usual to use smooth copper tube for exhaust pipe, but if it is rough, the part in the stuffing box should be smoothed up.

This unit gives a neat appearance, and will be perfectly water-tight for this purpose.

L. R. K., Bethlehem, Pa.

Many Standard Fittings Suitable

THERE are several good types of bronze exhaust pipe connections on the intake, the proper installation of which will produce satisfactory results.

The sketches on the next page indicate several good installations.

Figs. 3 and 7 show about the best arrangement which consists of a flanged and threaded casting with a screw flange on the inside. Connection with the pipe is made with a coupling. Sometimes the casting is tapped on the inside into which the pipe may be screwed.

An oak block carefully and securely fitted between the

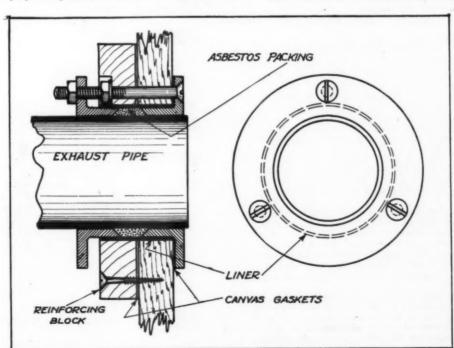
An oak block carefully and securely fitted between the ribs should always be provided to reinforce the planking at this point. This will resist the vibration of the motor

or any extreme pressure from the outside.

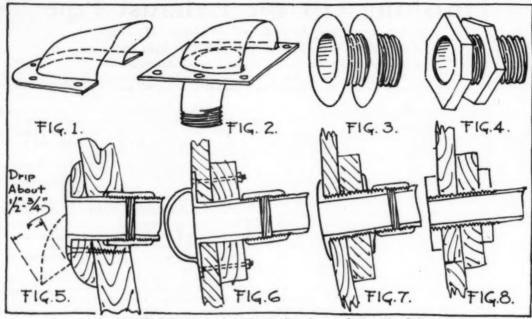
Figs. 4 and 8 show a cheap and simple arrangement although it may not look so well. It consists of a long thread on the exhaust pipe with a locknut on both inside and outside. It probably would be better to use a long threaded brass nipple and brass locknuts instead of gal-

Figs. 2 and 6 show a casting made for under water exhaust connection. This may also be used in the case of a side exhaust above water. The hood or shield will prevent to a certain extent, the exhaust gas and steam from blowing up over the side of the boat.

Fig. 1 shows a hood which may be provided to shield



A very acceptable packing gland is built at the exhaust line discharge by L. R. K.



A. G. W. designs several suitable details using standard marine fittings

one of the plain outlets when used as a side exhaust. Fig. 5 shows an exhaust through the transom. The pipe not being square to the transom should be provided with a wedge shape block to fill up the difference between the flange and the transom. It makes the best and most desirable job to have the pipe square to the outside surface and thereby avoid the use of the wedge.

Sometimes a flush exhaust will cause a dirty streak.

Sometimes a flush exhaust will cause a dirty streak, under the exhaust port, on the boat, due to the carbon and rusty water expelled. It then may be advisable to provide a drip as indicated by dotted lines on Fig. 5. This drip can be made of soft copper, hammered out to shape, and inserted under the flange before it is tightened up. Of course, sometime the skiff may strike it and knock it out of shape, but it probably can be easily hammered back again into its original position.

A. G. W., College Point, N. Y.

Vibration Must Be Absorbed

HERE are three disturbing factors which must be taken care of to insure a water-tight joint between the planking and the exhaust line. In the order of their importance they are: First, vibration and movement of the motor being transmitted to and putting strain on the above mentioned joint. Secondly, expansion of exhaust line due to heat of exhaust also putting stress on the joint, and third, charring or burning of gaskets and planking by the hot exhaust pipe.

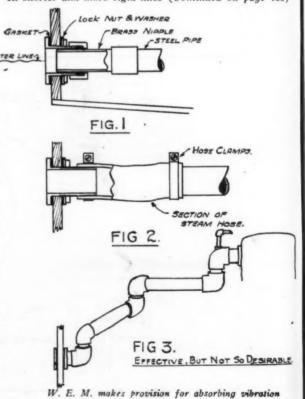
The remedy for the first two conditions is, of course, a means of introducing flexibility in the exhaust line, in which case any movement or vibration is absorbed in the line and not transmitted to the planking as in the case of a rigid exhaust line.

The third factor, burning of gaskets or planking is most easily remedied and seldom exists in a modern motor installation, for it is almost universal practice to run the cooling water from the motor into the exhaust line, a most commendable practice not only from the standpoint of preventing charring of wood and preventing fires, but also as a means of muffling the noise of the exhaust by reducing the volume of the gases.

Flexibility in the exhaust line may be obtained as shown in figures one and two in the sketch. Figure one illustrates a method of taking care of both motor vibration and pipe expansion in installations where the exhaust line has a long and practically straight run and passes through the transom at the stern. It consists of a stuffing box made to fit the

exhaust pipe and is provided with an outside flange under which a rubber or canvas gasket is placed, and an inside washer and locknut which may also be equipped with a gasket. A short section of brass pipe is substituted for the usual steel pipe where it passes through the stuffing box, to insure proper working of the packing glands by eliminating rusty surfaces.

No provision need be made to take care of sidewise vibration in a long straight run of this kind as little movement is transmitted except in the line of the axis of the pipe. In shorter and more rigid lines (Continued on page 100)



Questions and Answers on Lesson No. 13

Small Boat Handling, the Effect of Wind and Tide When Making Landings, Recovering Anchors, and Getting Off the Bottom When

1. Q: Which is the weather side of the boat?

The side toward the wind. Which is the leeward side of the boat?

A: The sheltered or opposite side of the boat toward which the wind blows.

the wind blows.
What is meant by off the wind?
Sailing with the wind abaft the beam.
What is meant by down the wind?
Sailing with the wind coming over the taffrail.
What is meant by windward?
The direction from which the wind is coming.
What is a beam wind?

Q: What is a beam wind? A: One which is blowing from the side or at right angles to the ship's keel. 7. Q: If the helm is put to port, which way does the bow

A: To the right, or starboard.

8. Q: If the helm is put to starboard, which way does the bow

a. To the left, or port.
b. Q: As a general rule, which way does the bow tend to swing due to the action of the propeller?
c. Right-hand wheel swings the bow to port, left-hand wheel to starboard.

- 10. Q: In making a landing, as a general rule, is it preferable to run the port or starboard side of the boat alongside of the float when winds, currents, etc., are not a factor?
- A: The port side.

 11. Q: When going full speed ahead, how many strokes on the engine-room gong indicate full speed astern?

 A: Four bells without a jingle.

- 12. Q: In turning around in narrow quarters, or in restricted quarters, is it better to turn to port or to starboard?

 A: To port with a right-hand wheel.

 13. Q: In backing, does the bow tend to swing toward the port

or starboard?

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A: To starboard.

14. Q: When it is necessary to back in restricted quarters, is it better to plan to back so that the bow will swing to port or to starboard?
A: To starboard.

In the questions numbered 15 to 22, which follow, the assumption is that the offshore side of the float bears north-south. The other two sides bear east-west, while the inshore side or westerly edge is inaccessible.

15. Q: A raised deck cruiser is made fast to a float and is heading due north, the wind is blowing from the north,

heading due north, the wind is blowing from the north, turning quarters are limited, but the course which the boat is to take is due south. Describe the best method to get away from the float and get on one's course.

A: Cast off the bow line and hold fast on the stern. Reverse slightly and allow the bow to swing to starboard. The wind will then act on the port bow and side, causing the boat to swing about. When nearly completely about cast off stern line and proceed in the desired direction.

O: A raised deck cruiser is made fast to a float and is

16. Q: A raised deck cruiser is made fast to a float and is heading due north, the wind is blowing from the north-east, turning quarters are limited, but the course which

east, turning quarters are limited, but the course which the boat is to take is due south. Describe the best method to get away from the float and get on one's course.

A: Cast off bow line and hold fast on the stern, as before, allowing a greater length of line which should be fastened to the southerly end of the wharf. Reverse, and as the boat backs the stern line will check its way and permit the bow to swing to starboard, the stern entering the space to the south of the wharf and the boat swinging so that the bow will shortly take the wind on the port side. When the hull has swing sufficiently, come ahead with the helm to port and assume the southerly course desired. course desired.

17. Q: A raised deck cruiser is made fast to a float and is heading due north, the wind is blowing from the east, turning quarters are limited, but the course which the boat is to take is due south. Describe the best method

boat is to take is due south. Describe the best method to get away from the float and get on one's course.

A: The procedure in this case will be in general similar to the answer given in question 16. It will be necessary to secure the stern line on the port side aft of midships. Back up slowly with a starboard helm and see that the hull clears the southeast corner of the wharf. Hold the line until the boat heads east and then come ahead, as before, and assume the southerly course desired.

18. Q: A raised deck cruiser is made fast to a float and is heading due north, the wind is blowing from the south-east, turning quarters are limited, but the course which the boat is to take is due south. Describe the best method

to get away from the float and get on one's course.

A: Cast off the stern line and hold a bow line. With the helm to starboard, come ahead slowly and allow the stern to swing to starboard. As the hull swings, the wind will blow stronger on the port side and help the boat around. When it heads about southwest, reverse and cast off the bow line. When clear of the wharf come ahead and assume the desired course.

O: A raised deck cruiser is made fast to a float and is

A raised deck cruiser is made fast to a float and is heading due north, the wind is blowing from the south, turning quarters are limited, but the course which the boat is to take is due south. Describe the best method

turning quarters are limited, but the course which the boat is to take is due south. Describe the best method to get away from the float and get on one's course.

A: The procedure in this case will be in general similar to the answer given in question 18. Hold the bow line and come ahead slowly with a starboard helm. The hull will swing out, since the wind is south. As the boat begins to head southwest, cast off the bow line, reverse and come ahead on the desired course when clear.

20. Q: A raised deck cruiser is made fast to a float and is heading due north, the wind is blowing from the southwest, turning quarters are limited, but the course which

west, turning quarters are limited, but the course which the boat is to take is due south. Describe the best method to get away from the float and get on one's course.

A In this case it will be merely necessary to cast off the stern line and allow the wind to do the work of turning the hull. When the boat is heading directly into the southwest wind, the bow line can be cast off and by coming ahead slowly with a starboard helm the boat will swing to the south and assume the desired course.

O. A raised deck cruiser is made fast to a float and is

will swing to the south and assume the desired course.

21. Q: A raised deck cruiser is made fast to a float and is heading due north, the wind is blowing from the west, turning quarters are limited, but the course which the boat is to take is due south. Describe the best method to get away from the float and get on one's course.

A: Cast off the stern line and hold the bow line, which can be fastened further aft than the bow bitts, if possible. Permit the wind to swing the hull until it heads west or south of west. Cast off this line, reverse slightly, and when clear come ahead with a starboard helm and assume the desired course.

22. Q: A raised deck cruiser is made fast to a float and is

A raised deck cruiser is made fast to a float and is heading due north, the wind is blowing from the north-west, turning quarters are limited, but the course which the boat is to take is due south. Describe the best method

A: Cast off the bow line and hold fast with a line outside of the hull, on the starboard side, under the stern. The wind will swing the bow and the hull will head southeast. When almost on a southeasterly course, come ahead and stroighter out as desired.

ahead and straighten out as desired.

23. Q: It is desired to land at a float having three sides free to land against. The east side is the offshore side and to land against. The east side is the offshore side and bears north-south and the other two sides bear east-west. Assuming that there is plenty of room to maneuver, describe how you would land at this float, on which side of the float and with which side of the boat when coming from the south with the wind blowing from the north. (No current.)

A: Approach the east face on northerly course and when sufficiently close to secure a bow line, do so and make it fast. A stern line can then be made fast and the stern hauled in to the required distance from the float.

24. Q: In question 23, describe landing with the wind from the

northeast.

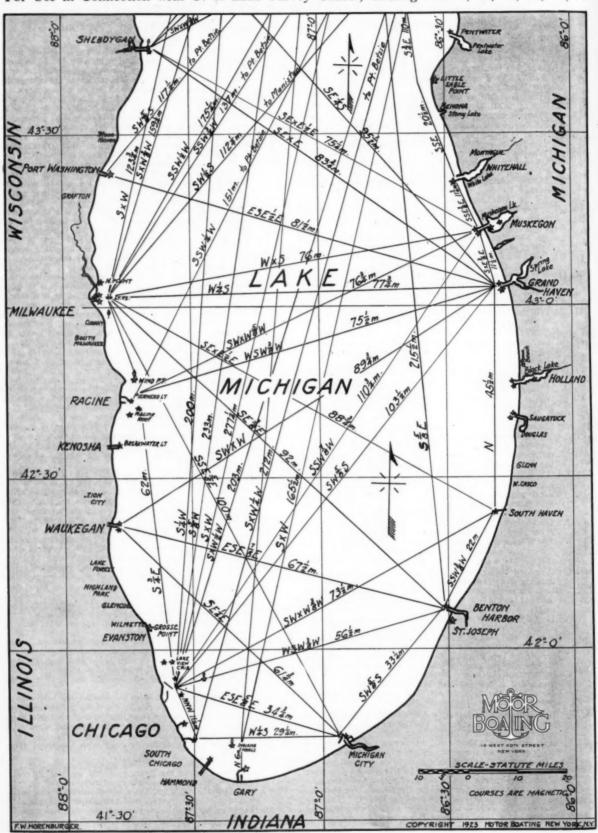
A: Approach with the intention of landing the port side of of the boat to the east side of the float. Allow sufficient clearance, check the headway, and as the wind will drive the boat toward the float, secure the bow and stern lines

when sufficiently close.

25. Q: In question 23, describe landing with the wind from

A: There is a choice of landing against the northerly or southerly faces of the float as desired, against the wind. It will be necessary to swing completely around so as to head into the wind on the desired side and run in on an easterly course parallel to the edge of the float. Check the speed and when abreast of the required position (Continued on page 134)

Motor Boatman's Chart No. 42, Lake Michigan—Southern Part For Use in Connection with U. S. Lake Survey Charts, Catalog Nos. 7, 73, 74, 75, 76, 77

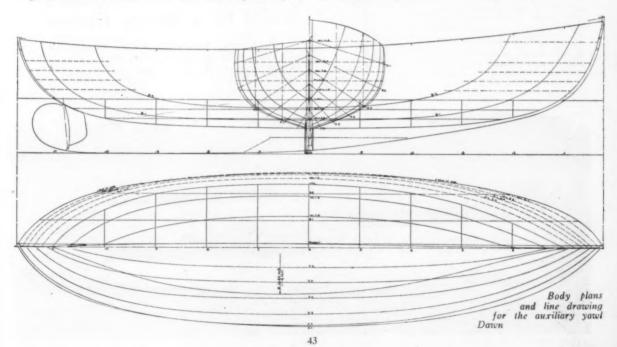


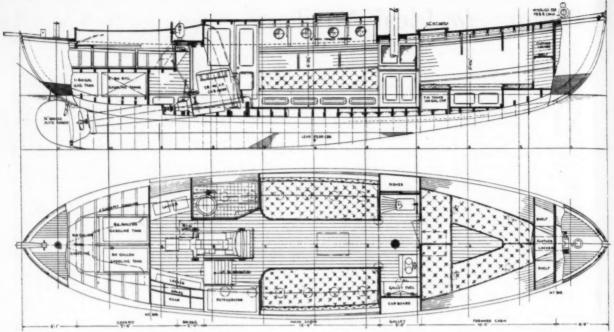
Dawn, An Ideal Auxiliary Practical Example of the Success of MoToR BoatinG's Recent Ideal Auxiliary Contest By Thomas Moore Outboard profile of 43-foot auxiliary yawl Dawn, pat-terned after the UCH pleasure has been derived from the study involved in producing the design of the yawl rigged cruiser Dawn, which was based on the original schooner Indradesign of the schooner Indrashama, a contestant in MoToR shama BOATING'S Ideal Auxiliary design competition, which was published in the November, 1919, issue. After much pre-liminary work with John D. Ohrt of Milwaukee we completed the design, the work on which was greatly facilitated by Mr. Ohrt preparing a small wooden half model. This embodied his ideas as to dimensions and general form and the result was the design reproduced here. There was no endeavor made to perpetuate any one of the more or less famous types of small sail-ing craft of former days, but the design as' in the case of Indrashama leans toward the whaleboat form of hull and is consequently well adapted for either sail or motor power. The interior arrangement 00000 centers around the main cabin, which has been made a large and commodious compartment, affording comfortable day quarters for the

entire party aboard, while berthing has been arranged for guests, by means of a separate compartment forward to provide a certain measure of privacy for the owner in the main cabin. The galley extends athwartship between the main cabin and the forward berthing compartment and has sufficient headroom to enable meals to be prepared without inconvenience. The toilet is accessible from the companionway without actually entering the main cabin.

The power plant to be installed, is a model A-4 J. V. B. engine, which will enable Dawn to make very fair speed

with sails furled. The installation has been arranged so that the engine is accessible from every side thus facilitating the work of tuning up of this important piece of equipment. Aft of the motor under the bridgedeck plenty of space is arranged for stowage of gear of all sorts, and from this point instant examination can be made of the inside shaft stuffing box, the rack and pinion of the steering gear and the clutch and reverse mechanism of the motor. A hatch located in the bridgedeck has been installed to give light and air to the engine room.





Inboard construction profile and arrangement plan of the auxiliary yawl Dawn

On deck everything is roomy, wide spaces being left on each side of the cabin trunk while forward, the forecastle deck is unusually clear. The rig is fairly large for this type of craft with a considerable portion of the area concentrated in the mainsail. No difficulty is anticipated by Mr. Ohrt in handling Dawn with this rig and he feels that a mainsail of good driving power is essential for the usual service for which the craft will be used.

Considerable inside ballast will be stowed along the keel

Considerable inside ballast will be stowed along the keel for both trimming purposes and also to increase the stability and with the naturally powerful hull it is expected that

Dawn will carry her canvas well.

Dawn is now being constructed under the supervision of

Mr. Ohrt at Milwaukee and at the present time of writing is well under way, with the prospect that the boat will be seen in service on Lake Michigan during the coming summer.

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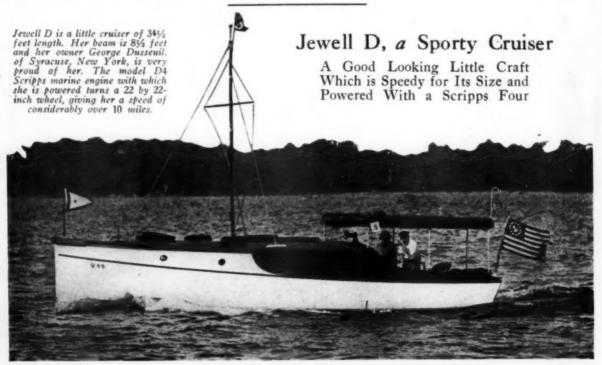
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Her general dimensions are: Length over all 43-feet 5-inches; length, load water line 37-feet 9-inches; breadth, extreme, 11-feet 1½-inches; draught, 4-feet; displacement, 20,500 pounds.

The schooner Indrashama mentioned in the beginning of the article as being the basis of the present design, was one of the most popular of the designs submitted in the Ideal Auxiliary contest which was conducted by MoToR Boating. The yawl Volante was adjudged the best design.



Yard and Shop

Notes of Interest to Both Owner and Manufacturer

A Remarkable Trip

URING last summer Arthur Ohme of Chicago crossed Lake Superior in a 16-foot square stern canoe of the type especially prepared for the use of outboard motors. This little boat was equipped with a Johnson light weight 35 pound twin cylinder engine for this passage. It is believed that this is the first time that any body of water of this size has been crossed in a craft of such a small size. Crossing this lake was an incident in

a trip of 4,000 miles in length, during which Mr. Ohme made a grand circle north from Chicago along the shore of Lake Michigan, east and up to the Sault Ste. Marie river, around and across Lake Superior, into the Minnesota lakes, down the Mississippi river, and back through the rivers and canals to Chi-

This remarkable achievement of both man and motor has been interestingly written up and illustrated by the Johnson Motor Company of South Bend, Ind. They will be glad to send a copy of this booklet to any interested reader on request. Its title is "Across Lake Superior in a 16-Foot Canoe" and it will be found to be full of interesting details and illustrations made in the progress of the cruise.

Standardized Runabouts

At the new general sales office of the Dachel-Carter Boat Company of Benton Harbor, Mich., which has just been established in the Monadnock Building, Chicago, Ill., are being shown specimens of the new standardized 21-foot sport model and the 26-foot mogul type runabouts These boats are of the most modern design and the sport model is regularly equipped with a 30-horsepower Buffalo engine. The larger model is sup-plied with a choice of motors to suit the individual requirements and satisfactory speeds can be obtained for most every purpose. In addition, an extensive line of outboard motor models is shown. These are suitable for the regular type portable engine or the light weight inboard engine. Row boats and a small high-speed hydroplane adapted for a small engine are also included. The manufacturing facilities of their plant are ample to take care of all boats up to 125 feet in length in either steel or wood construction.

Woolsev Company Celebrates

On the occasion of the fifty-fifth anniversary of Mr. Frank Woolsey's connection with the C. A. Woolsey Paint and Color Company at Jersey City, several close friends urged him to be present at an entertainment which was transformed into a surprise by his associates and employees. A banquet was arranged to celebrate his fifty-five years of service and the seventieth anniversary of the company. A number of very appropriate tokens were presented to him on behalf of the employees of the company, revealing a spirit of friendship and loyalty be-tween employer and employees that was most marked. The menu used on this occasion was most novel and all items of food were disguised under the names of various paint products made by the company which had a faint resemblance to the delicacies offered on the table. For example, the celery and olives were described as shellac sticks and kauri gum.

Business is Booming

The Greenwich Yacht Yard at Greenwich, Conn., found that the demand for their canvas work is so great that they have added to their staff A. W. Hathaway, formerly of Herreshoff's. Mr. Hathaway is one of the most capable sail makers in the country today and his addition to the organization will permit it to attend to all requirements for canvas

Consolidated's Busy Miami Office

Several years ago C. G. Amory, Treasurer of the Consolidated Shipbuilding Corporation opened an office in Miami to handle the winter business of the company. It was the first big company to be represented in Miami and the success of the venture proves the soundness of the thought. This office is maintained, not so much for the purpose of doing new business, as it is for the service which it is possible to render to old patrons. As a leader in the field of high-class pleasure boat builders, the Consolidated Cor-poration have found that their growth has been steady and con-Under Mr. Amory's tinuous. Under Mr. Amory's personal direction a corps of designers prepares studies for boats so that a client can be given a working basis of his ideas and later see them developed into the finished product. oped into the minished product. At Miami this winter were found many of the world's foremost yachts, all Consolidated built. A few which can be mentioned are Specjacks, Whirlwind, Lyndonia, Smyphonia, Adventuress, and others too purposerus to mention. numerous to mention.

A New Spot Light

An optically and mechanically perfect spotlight has just been brought out by the Robert Bosch Company and corre-

Schedule of 1923 Racing Events

June 23-24—New York Atlantic City and Return Columbia Yacht Club, N. Y. and Atlantic City Yacht Club.

June 30-Express Cruiser Championship of America Cruiser Championship of Connecticut River, Middletown Yacht Club. July 7-New York to Block Island, New York Athletic Club.

July 15-Round Manhattan, New York Motor Boat Club.

July 28 - Aug. 12-Chicago Regatta, International Trophy

Aug. 4—American Power-Boat Association Handicap Cruiser Championship of America, Philadelphia Yacht Club.

Aug. 9-11—Fisher-Allison Trophy Race, Chicago, Ill. Aug. 11—New York to Newburgh and Return, New York Motor Boat Club.

Aug. 29 - Sept. 2-Gold Cup Regatta, Detroit Yacht Club.

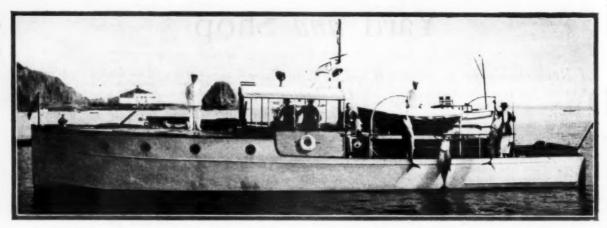
Aug.—28-Foot 1100 Cubic Inch Class Runabout National Championship Trophy, Lake George, New York.

Sept. 3-150 Mile Sweepstakes Ruce, Detroit Yacht Club.

Sept. 6-9-Toronto Races, Toronto Motor Boat Club. Sept. 13-15-Regatta of Buffalo Launch Club, Leary Trophy Race, Interstate Trophy, Buffalo, N. Y.



The two-masted schooner yacht Aafje is of The two-masted schooner yacht Adjle is of the fishing type and 58 feet long. She is owned by H. F. Hubbell, Des Moines, and was built by the Blanchard Boat Company. Seattle. Her power plant is a Stearns model MDU 35-70 h.p. medium speed engine. Under power alone she can average 8 miles, which is fast for a large boat



The 54-foot Great Lakes cruiser Goodwill, after a successful tuna fishing expedition. Keith Spalding, her owner, mentions that it is easy to catch the big ones if you know how. Tuna fishing is one of the favorite sports in the vicinity of Catalina Island, California

sponds with the standard for which all genuine Bosch products are famous. This light is equipped with a highly polished metal reflector which throws

the entire light forward, practically with-out losses. The construction of the lamp base insures an adjustment of the lamp which is always correct and needs no readjustment. This spotlight is a small size searchlight of long range and can be pointed by hand in any desired direction. It increases the safety of night operation and lights up all obstruc-tions. It is designed to operate on either six or twelve volt circuits.

New Pacific Coast Association

Every legally organized and qualified yacht club on the Pacific Coast from British Columbia to the Mexican border has been consolidated into the new Pacific Coast Yachting Association which is a consolidation of the three sectional coast associations there. The purpose of this new organization is not to interfere in any way or restrict the activities of the three sectional associations, but rather to

A breezy little 25 by 7-foot cruiser, built by the Bezanson Boat Company, and equipped with a 20 h.p. Kermath engine, with which it does 10 miles

form a clearing house where all differences can be smoothed out and events of particular where major benefit to each location can be arranged for on a broad scale. The officers elected to control the destinies of this

A sensible runabout being built by the Great Lakes Boat Building Corporation for Mrs. E. M. Kemp for use in Georgian Bay. This boat will be supplied with a four-cylinder Scripps model E4, which will drive her 18 miles. This 26-footer will embody everything which can be offered in a boat of its size

new association are Albert Soiland, Admiral, Los Angeles; Lester Stone of San Francisco, Vice-Admiral; James W. Griffith of Seattle, Rear-Admiral, and Clifford A. Smith

of San Francisco, Sec-retary-Treasurer.

New Lockwood-Ash Models

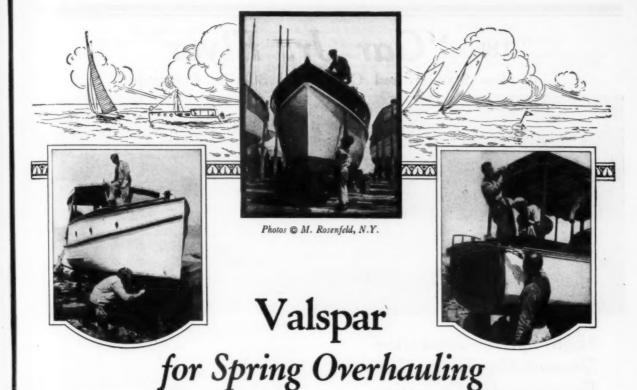
Since the Lockwood-Ash Motor Company of Jackson, Michigan announced the improved form of ignition to their models 24 and 68 and the new model 41, single cylinder, four cycle five-horsepower motor that is built around the use of standard Ford size parts for repairs, and their new unique, marvelous, rowboat motor equipped with the safety propeller, they have

experienced a very pronounced busy period. Their factory has been working to capacity in an endeavor to catch up and make deliveries of the orders on hand.

Practically every one of the old stand-by dealers of L-A equipment have reconcessioned territory and have placed their orders for a volume of business that has occupied the plant to capacity. New dealers are being rapidly assigned territory and it is the prediction that this season is going to be a mighty big one for the builders of medium size boats using small power units.

L-A two-cycle motors are reported to be in as much demand as ever, and they seem to be the favorite power units of those who are more familiar with the average run of power. Their Service Department is a thing of orderly convenience and it is not unusual to issue twelve-hour service, to its users

(Continued on page 68)



HERE'S how experienced yachtsmen avoid the necessity of a mid-season haul-out.

First the hulls of their boats, above the water line, get two coats of Valspar White Enamel or Valentine's Yacht White, either dull or gloss finish. They specify Valentine's because they know this is the brand that can be absolutely relied on to last throughout the season.

As a matter of fact, Valentine Marine Products are usually specified for all stages of the Spring overhauling so as to obtain the most lasting and satisfactory results.

After the two coats of Valentine Yacht White or Valspar White Enamel, two coats of Valspar Bronze Bottom Paint are applied below the waterline. This combination of the famous Valspar Varnish and pure bronze powder is absolutely anti-fouling and waterproof.

Then come the hand-rails, davits, and other metal fittings. Valspar Aluminum Paint for them! There's no similar paint as durable, weatherproof and rustproof because no other aluminum paint is made with Valspar Varnish.

For spars and bright work, above and below decks,—Valspar Varnish and nothing else!

Valspar comes in colors too—as Valspar Varnish - Stains and Valspar Enamels. The Varnish-Stain colors are—Mahogany, Light or Dark Oak, Cherry, Walnut, and Moss Green. The Enamels come in twelve standard colors, also White, Black, Aluminum, Gold, Bronze, and Flat Black.

Give your boat a "Valspar Overhauling"—it pays!

This coupon is worth 20 cents to \$1.20



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Valspar	VALENTINE & COMPANY 456 Fourth Ave., New York
Bottom Paint . Valspar Aluminum Paint .	I enclose dealer's name and stamps, amounting to 15c for each 35c sample can checked at left. (Only one sample of each product supplied at this special price. Write plainly.)
Valspar Yacht	Dealer's Name
White	Dealer's Address
State Color Valspar Stain .	Your Name
State Color	Address M.B4-23

THE "Gar Jr. Flyer"

A New Standardized Guaranteed 30-Mile Commuter



High Speed—Seaworthy Dependable—Low Cost Economical Operation

A 50-ft. twin screw motor yacht with sustained high speed, free of vibration, and remarkable seagoing qualities (as demonstrated by GAR JR. II in various long distance ocean races).

OVER 60,000 MILES WITH-OUT A BREAKDOWN!

That is the racing and cruising record of the GAR JR. II, holder of cruiser championships, and from which the GAR JR. FLYERS have been developed.



The roomy bridge deck and forward cockpit seat 12 persons.

Power plant consists of two twin-six "Liberty" motors developing 450 H.P. each, perfect in balance and control, absolutely reliable, and practically automatic in operation.



GAR JR. II completing record-breaking run from Miami to New York (outside route)
1260 miles at sea in 47 hours 23 minutes running time (21 min. less than schedule train time of famous "Havana Special")

For price, plans and full particulars, apply to

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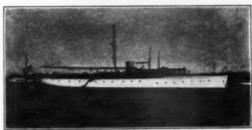
WHITEHALL 2700

NAVAL ARCHITECTS---MARINE INSURANCE---YACHT BROKERS
25 BROADWAY, CUNARD BUILDING (Morris Street Entrance), NEW YORK

On this page are shown a few representative yachts selected from our large lists. Should none appeal kindly acquaint us with your requirements. Full information regarding costs to build, purchase or charter yachts of all types gladly furnished.



No. 3830—For Sale—The only large, desirable twin-screw Diesel-Motor Yacht available; 145 x 20.3 x 7.6 ft. Built 1920. Speed up to 14 miles; two 250/500 H.P. 6 cyl. Winton-Diesel engines. Splendidly kept up vessel. Handsomely finished; tastefully furnished with the best. Large dining salon and social hall, also stateroom on deck; five staterooms below aft. Only available as owner is having larger yacht built from our designs. Cox & Stevens, 25 Broadway, New York.



No. 885—For Sale or Charter—Handsome 120' twin screw steel motor yacht. Exceptionally able. Speed up to 17 miles. Two 225 H.P. 6 cylinder Winton motors. Splendid accommodations: Deck dining saloon, three double staterooms, besides saloon. Our design. Cox & Stevens, 25 Broadway, New York.



No. 3127—Unusual opportunity to purchase high class 65 ft. handsome twin-screw cruiser at low figure. Construction, finish and equipment of the best. Speed 12 miles; two 50/75 H. P. Speedway motors (new 1920); electric starters, full motor controls on bridge. Excellent accommodation; dining saloon in deckhouse; with galley adjoining; two double staterooms and lobby with transom aft. Cox & Stevens, 25 Broadway, New York.



No. 1662—For Sale or Charter—Attractive 90-ft. modern power houseboat. All the comforts of a country home. Large saloon, four staterooms, two bathrooms, handsomely furnished. Cox & Stevens, 25 Broadway, New York.

k



No. 341—For sale or Charter—Large, sea-going steam yacht. Palatial accommodation. Unusual opportunity. Several similar larger and smaller available craft. Cox & Stevens, 25 Broadway, New York.



No. 979—Exceptional Bargain—98 ft. Lawley built twin screw cruising power yacht. Speed up to 16 miles. Standard motors. Deck dining saloon, three double and one single staterooms, two bathrooms, etc. Teakwood deck house and deck trim. Cox & Stevens, 52 Broadway, New York.



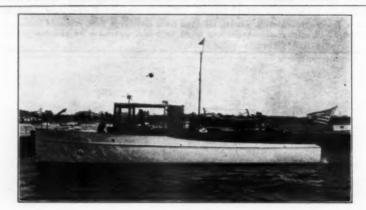
No. 2502—For Sale or Charter—(In commission.) Remarkably roomy twin screw semi-houseboat cruiser, 73' x 16.6' x 3'. Speed 11 miles. Two 20th Century motors (new 1922). 3'. Saloon and stateroom with double berth in deckhouse. Below forward are main saloon, two double and one single staterooms, shower bath, tollet, also dining saloon. Available at attractive figure. Cox & Stevens, 25 Broadway, New York.

PLANS, PHOTOGRAPHS AND PRICES ON REQUEST

NAVAL ARCHITECTS

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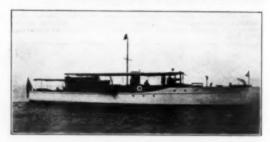
YACHT BROKERS







No. 3622—For Sale—Especially fine 48.6′ x 10.4′ x 3.6′ fast, twin screw bridge deck cruiser. Speed up to 28 miles. Two 6 cylinder Sterling motors)G-R type) new 1920. Built by Lawley. Handsomely finished. Double stateroom and foller room forward; saloon with two berths, toilet room and galley aft. Roomy after cockpit. Splendid craft of her type in excellent condition, having had thorough upkeep. Will be sold at reasonable figure for prompt disposal. For further particulars apply to Cox & Stevens, 25 Broadway, New York.



No. 3815—For Sale—High class, fast, twin screw power yacht: 80° x 13° x 3°. Built 1920. Splendid combination day boat and cruiser. Speed up to 20 miles; two 200 H.P. 8 cylinder Speedway motors. Dining cabin, galley and tollet room forward; two state-rooms, roomy saloon and tollet room aft. Unusually good crew quarters. Large bridge deck amidships and cockpit aft. Construction of very beat. Highly recommended by us. Excellent condition. Cox & Stevens, 25 Broadway, New York.



No. 4021—For Sale—Very roomy cruising power yacht, 70' x . 13' x 4'. New 1920. Speed 11 miles; 6 cyl. 70/90 H.P. Winton motor. Dining saloon, large galley and tollet room forward, two double and one single stateroom and bathroom aft. Large deck space. Heavily constructed. Economical to operate. Price low for practically new high grade cruiser of her dimensions. Cox & Stevens, 25 Broadway, New York.



No. 3933—For Sale—High class, fast, twin screw crulser, 60° x 11° x 3° . Built 1920. Best construction. Speed up to 25 miles. Two 200 H.P. Speedway motors. Dining saloon and galley forward. Double stateroom, shower bath and toilet room aft. Good crew quarters. Fine large after cockpit. Opportunity to secure especially fine craft of her type at attractive figure. Cox & Stevens, 25 Broadway, New York.

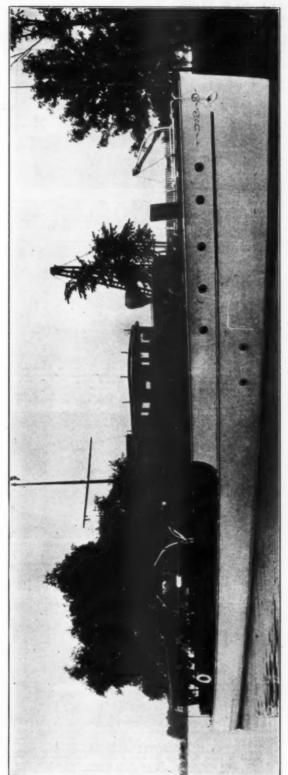


No. 3475—For Sale—Desirable 40' V-bottom day cruiser. Speed up to 18 miles; 6 cylinder 100 H.P. motor. Exceptionally roomy cockpit with bridge forward equipped with wind shield; two berths in cabin, toilet and galley. In excellent condition. Price reasonable. Apply Cox & Stevens, 25 Broadway, New York.

NAVAL ARCHITECTS

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YACHT BROKERS



Cruising speed No. 4038—FOR SALE—Especially attractive, practically new, twin screw, cruising power yacht; 84 ft. long, 15 ft. 6 inches beam, 3 ft. 6 inches draft. miles; maximum speed 16 miles per hour. Built 1920 by Consolidated Shipbuilding Corp., in best possible manner, regardless of cost. 14

Powered with two 6 cyl. Speedway Motors, 634 inches x 8½ inches, developing 115 H.P. each; gasoline consumption 18 to 20 gallons per hour, at cruising speed of niles. Winton 5 K.W. 110 Generating Set; 100 cells Edison Storage Battery.

Forward are located crew's forecastle, toilet and large separate galley; dining saloon in deckhouse, seating eight persons comfortably on chairs; enclosed bridge with Captain's berth. Owner's and guests quarters aft, including three double staterooms, one bath and toilet room full width of vessel, additional toilet room and living room 11 x 13 ft., with both side-companionway to deck and after companionway to comfortable roomy cockpit aft. Interior beautifully finished in mahogany throughout. Engine **ACCOMMODATION** room has full headroom and splendidly arranged.

EQUIPMENT AND FURNISHINGS

Opportunity to purchase unquestionably the finest craft of type and size on market. Highly recommended by us to any one who desires the best available. Hand-Unusually complete and of best quality available. Deck equipment includes one 16 ft. motor tender with 4 cyl. Universal Engine (electric starter); one 12 ft. dinghy; double awnings. Westinghouse radio receiving set. Electric heaters; electric fans; Chickering upright piano and electric victrola in main saloon. some cruiser with exceptional speed and accommodation and excellent seaworthy qualities.

The yacht, her equipment and furnishings are in first-class condition in every respect, having had only light usage. Only available as the owner is unable to use her.

The yacht can be inspected in New York, and a representative will be pleased to accompany interested party at any time. For immediate disposal, a figure slightly in excess of one-half of the cost to build and equip the craft will be accepted. For plans, further particulars and inspection apply to

COX & STEVENS, 25 BROADWAY, NEW YORK TELEPHONE NO. 2700 WHITEHALL

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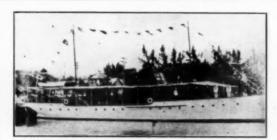
NAVAL ARCHITECTS
ENGINEERS
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MARINE INSURANCE

HENRY J. GIELOW, Inc. Tel. 1 Murray Hill 9134 Cable Address Crogle, New York

25 West 43rd STREET, NEW YORK

Plans and specifications for new yachts of any size or type should be prepared now to assure delivery for next year. Have plans of new yachts, all types, on file now.

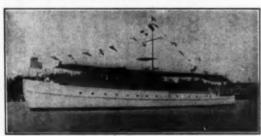
We have a most complete and up-to-date list of stamm and meter yashts of all sizes, sail, auxiliary, and houseboats, on the in our office, kept constantly up-to-date by a thorough and comprehensive canvage of the entire yashting field from time to time. We are in a position to enhalt full information on any type of heat, upon request.



No. 7866—For Sale—Florida Delivery—Ninety-five foot twin screw, modern, up-to-date yacht, specially adapted for Florida cruising; just returned from cruise to Cuba; big bargain. Flat particulars upon application to H. J. Glelow, Inc., 25 West 43rd St., New York City. Telephone: Murray Hill 9134.



No. 7896—For Sale—Most attractive sedan day cruiser. Gielow designed. Lawley built, mahogany planked, Speedway engines, 18 mile speed, used but very little, price attractive. Further particulars turnished upon application to H. J. Glelow, Inc., 25 West 43rd St., New York City. Telephone: Murray Hill 9134.



No. 8067—For Sale or Charter—Desirable twin-screw cruising houseboat suitable Florida and Northern waters. 88 ft. x 19 ft. x 3 ft. 6 in. 20th Century motors. Boat entirely overhanded and refitted 1920, three double and one single staturooms, saloon, deck saloon, sleep 8. Electric light and heating plants new 1920. Bath, two toilets. Has cruised Florida each year, good sea boat. Beasonlie. Henry J. Gielow, Inc., 25 West 45m ft. New York City.



No. 7720—Unquestionably the finest cruiser for sale as to construction, finish, completeness and accommodations for size. 54' x 13' 3. Never in Government service. 50 H.P. Twentieth Century motor overhauled Fall 1922. Speed 12 miles. All deck trim and interior teak and mahogany. Equal new. Double state-room and saloon sleep 4-0. Large galley, crew quarters and engine room, all rull headroom. Offered at half cost of duplicating. Owner gone abroad. Henry J. Gielew, Inc., 25 West 43rd St., New York City.

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No. 7047—For Sale—Eighty-four foot twin screw, high speed ferry cruiser, specially designed for this work. Sterling Engines, speed up to 30 miles per hour. Double planked hull in splendic condition. Big bargain. Act quick. Full particulars upon application to H. J. Gielow, Inc., 35 West 43rd St., New York City. Telephone: Murray Hill 9134.



No. 8100—For Sale—Commodious steam oil burning houseboat.
Would make fine commercial boat for passengers and freight. Ecomomical to operate. 100' x 33' x 7'; upeed 9 miles. Has six sixterooms, large deck house. Very heavy strong construction, completely equipped, four boats. Emtirely overhauled 1922 and in fine
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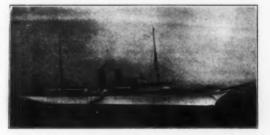
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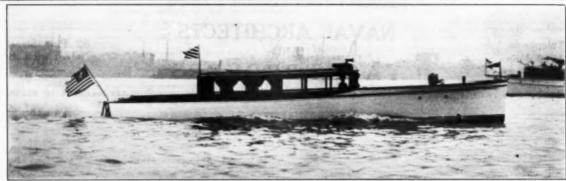
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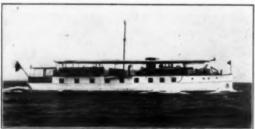
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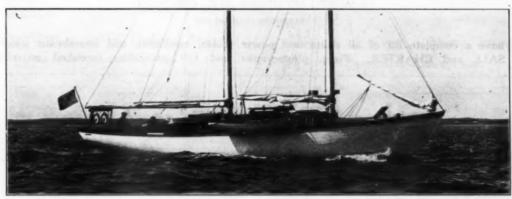


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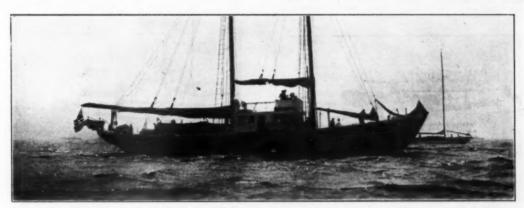
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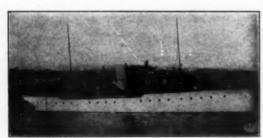
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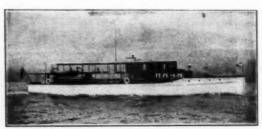
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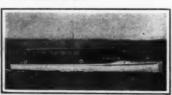
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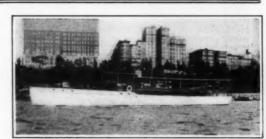
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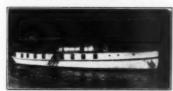
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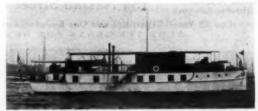
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 - 48 H. P. Barber, 4 cyl., 2 cycle, 61/2 x 61/2, with coll, carburetor, coupling, spark plugs. AS 18.
- 45-75 H.P. Sterling, 5½ x 6", Model B, 6 cyl., 4 cycle, with Bosch magneto. Schebler carburetor, reverse gear, etc., all complete up to and including coupling.
- 40-50 H.P. Knox, heavy duty, 4 cyl., 4 cycle, 7 x 8, with magneto, coil, carburetor, reverse gear, ecc.; complete up to and including coupling.
- 40-50 H.P. Hall, 6 cyl., 4 cycle, 5\% x 6\%, carburetor, Bosch magneto, coll.
- 40-50 H.P. Anderson, 6 cyl., 4 cycle, 5 x 6, with carburetor, coil, spark pluss, magneto, rear starter, reverse gear, etc.; complete up to and including complete.
- 40-50 H.P. Twentieth Century, 4 cyl., 4 cycle, heavy duty, 6½ x 8½, with carburetor, ooll, magneto, reverse gear, etc.; complete up to and including coupling.
- 40-50 H.P. Twentieth Century, 6 cyl., 4 cycle., about 5 \(\times 7 \), with carburetor, coll. magneto, reverse gear, etc.; complete up to and including coupling.
- 40-50 H.P. Middleton-Meade heavy duty, 3 cyl., 8½ x 12, valve in head, with magneto, separate timer and coil, oiling system, reverse gear, etc., complete up to and including coupling.
- Twin 40 H.P. Lamb, Model "R," 6 cyl., 4 cycle, 5½ z 6, weight 1650 lbs. each, with Bosch magnetos, colls, carburetors, reverse gears, etc.; complete up to and including couplins.
 - 40 H.P. Roberts, 4 cyl., 2 cycle, with carbureter, coil and coupling. AS IS.
 - 40 H.P. Ajax, 4 cyl., 4 cyc., 6 x 7, with carburetor, coll, magneto, reverse gear, heavy duty. AS IR.
 - 40 H.P. Speedway, 4 cyl., 4 cycle, 6 x 8, with Bosch magneto, and separate timer and coll for double ignition, air pump, ciling system, reverse, cer., complete up to and including coupling, rebuilt two years ago by manufacturers and still in splendid running condition.

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- 40 H.P. Eico A & B, 4 cyl., 4 cycle, with carbureter, ceil, magneto, reverse gear, electric starter and generator. AS 1S.
- 35-85 H.P. Sterling, 6 cyl., 4 cycle, 8½ x 6½, model "FH." with carburetor, call and distributor ignition, also magneto, dual ignition (double independent ignition systems with two separate apark plugs in each cylinder), reverse gear, etc., complete up to and including coupling, completely overhauled, retested and refinished in the Sterling factory at Buffalo.
- Two 32-37 H.P. Standard, 4 cyl., 4 cycle, 6 x 8, carburetor, coil, magneto, reverse gear, etc., complete up to and including coupling.
- 30-45 H.P. Sterling, 4 cyl., 4 cycle, 51/2 x 6, with carburetor, coil, magneto, reverse gear, etc., complete up to and including coupling.
- 30-40 H.P. Brown, 4 cyl., 2 cycle, coll, carburetor and spark plugs. AS 18.
- 30-40 H. P. Grant Ferris, 4 cyl., 4 cycle, 6 x 6, with carburetor, coil, Atwater Kent ignition and reverse gear. AS 18.
- 30-35 H.P. Eddystone-Globe, 6 cyl., 2 cycle, with two Schebler carburetors, coil, Atwater Kent distributor, Baldridge reverse gear and coupling. AS IS.
 - 30 H. P. Lamb, 4 cyl., 4 cycle, overhead valve, latest type, 4½ x 6½, with carburetor, coll, magneto, reverse gear, etc., complete up to and including coupling.
 - 28 H.P. Murray & Tregurtha, 3 cyl., 4 cycle, 6½ x 8, with carburetor, coll, magneto, reverse gear. AS 18.
 - 28 H.P. Campbell, 4 cyl., 6 cycle, 5½ x 6½, with carburetor, ooil, Atwater Kent ignition mechanical olier, reverse gear, etc., complete up to and including coupling. AS 18.
- 25-40 H.P., Sterling, 4 cyl., 4 cycle, 4% x 5½, with carburetor coil, complete ignition outfit, reverse gear, etc., complete up to and including coupling.
- Twin 25-37 H.P. Craigs, 4 cyl., 4 cycle, valve-in-head, heavy duty, 6 x 7, with carburetor, coli, magneto, reverse gear, air pumps, etc., complete up to and including coupling.
 - 25 H.P. Tuttle, 2 cycl., 2 cycle, with coll, carburetor, spark plugs, etc.; complete up to and including coupling. AS IS.
 - 24 H.P. Fairbanks, 4 cyl., 2 cycle, complete with carburetor, timer, coil and coupling. AS IS.
 - 24 H. P. Lamb, 4 cyl., 4 cycle, 51 x 6, with carburetor, coil, magneto and reverse gear.
- 20-35 H.P. Sterling, 4 cyl., 4 cycle, 4% x 5%, with carburetor, coil, Bosch magneto, reverse gear, etc., complets up to and including coupling.
- Four 20 H.P. Relaco, 4 cyl., 4 cycle, 4 x 6, with carburetoc, coil, reverse hear, etc.; complete up to coupling.
 - 20 H.P. Kermath, 4 cyl., 4 cycle, Unit F, with Bosch magnete and impulse coupling, carburetor, reverse gear, etc., complete up to and including coupling, rebuilt, retested and refinished in the Kermath factory.
 - ling, rebuilt, retested and refinished in the Kermath factory.

 20 H.P. Kermath unit nower plant, outfit F 1922 model, carburetor, cold
 - 20 H.P. Kermath, 4 cyl., 4 cycle, separate power plant, with reverse gear, carburetor, coll, Bosch magneto, complete up to and including coupling.
- Two 18-25 H.P. Sterling, 4 cyl., 4 cycle, 4% x 5½, with carburetor, coil, magneto, reverse gear, etc.; complete up to and including coupling.
- 18-25 H.P. Sterling, 4 cyl., 4 cycle, 4% x 5½, with carburetor, coll, reverse gear, electric self starting and charging outfit attached, etc., complete up to and including coupling.
- 17-25 H.P. Sterling, Model "E-1," 4 cyl., 4 cycle, 3% x 5%, with carburetor, coll, magneto, rear starter, reverse gear, etc.; complete up to and including coupling.
- 17-25 H.P. Model E-2, 4 cyl., 4 cycle, 3% x 5\\(^{''}\), enclosed type Sterling, with carburetor, coll. magneto, reverse gear, etc.; complete up to and including compiles.
- 17 H.P. Fairbanks-Ferro, 3 cyl., 2 cycle, with carburetor, coil, magneto, spark plugs and coupling. AS 18.
- 16-20 H.P. Grimm, 4 cyl., 4 cycle, 3% x 4, with carburetor, coil, spark plugs, magneto and reverse gear. AS 18.
 - 16 H.P. Globe, 2 cyl., 4 cycle, 7 x 8, with carburctor, coil and reverse gear. AS IS.
 - 16 H.P. Kennebec, 2 cyl., 2 cycle, with carburetor and coll. Cylinders rebored and new pistons and rings in 1922. AS IS.
 - 16 H.P. Rochester, 3 cyl., 2 cycle, with carburetor, coil, Gles reverse gear. AS 18. coupling.
 - 16 H.P. Lathrop, 2 cyl., 2 cycle, with carburetor, M. & B. ignition and coil, Paragon reverse gear. Overhauled in 1822 and in splendid running condition. A8 IS.
 - 15 H.P. Fulton, 2 cyl., 2 cycle, with carburetor, ignition, etc.; complete up to and including coupling. AS IS.
 - 15 H.P. Royal, 2 cyl., 2 cycle, with oarburetor, coll, reverse gear, etc. AS IS.
 - 15 H.P. Eagle, Model "2-E," 6 x 64, with muffler, two Schebler carburetors, spark plugs, coil, etc.; up to and including coupling.
 - 15 H.P. Ferro, 2 cyi., 2 cycle, with carburetor, coil, reverse gear. AS IS.

Description

- 15 H.P. Mianus, 2 cyl., 2 cycle, with carburetor, coil, low tension magneto, Paragon gear, etc., complete up to and including coupling. AS 18.
- 12 H.P. Barber, 2 cyl., 2 cycle, with carburetor, coil. AS IS.
- 12 H.P. Automatic, 2 cyl., 4 cycle, 5½ x 7, with carburetor, coâl, reverse gear, etc., complete up to and including coupling.
- 12 H.P. Palmer, 2 cyl., 2 cycle, with carburetor, coll, timer and reverse gear, engine overhauled 1 year ago by factory. AS 18.
- Three 11 H.P. Ferro, 2 cycl., 2 cycle, with carburetor, coil, spark plugs, and oiling system. AS 18.
 - 11 H.P. Lackawanna, 2 cyl., 2 cycle, with carbureter, cell, spark plugs. AS
 - 11 H.P. Knox, 2 cyl., 2 cycle, with carburetor, coll, coupling. AS 18.
- 10-12 H.P. Fairbanks Morse, 2 cyl., 2 cycle, make and break, ignition and coll. AS IS.
 - 10 H.P. Fulton, 2 cyl., 2 cycle, with carburetor, coil. AS IS.
 - 10 H.P. Hubbard, 1 cyl., 2 cycle, with coil and coupling. AS 18.
- * 10 H.P. Stanley, 2 cycl., 2 cycle, with carburetor, coil and reverse gear, complete up to and including coupling.
 - 10 H.P. Fay & Bowen, 2 cyl., 2 cycle, with carburetor, coll and reverse gear. AS 18,
- H.P. Mianus, 2 cyl., 2 cycle, M-B ignition, carburetor, coll and reverse gear. AS IS.
- 10 H.P., Lathrop, 2 cyl., 2 cycle, with make and break ignition and coil, oil cups, Paragon reverse gear. AS IS.
- 10-12 H.P. Palmer, 2 cyl., 2 cycle, with carburetor, coil, spark plugs and coupling, rebuilt by Palmer Co. in July, 1922, and in splendid running order. AS IS.
- 8-10 H.P. Royal, 2 cyl., 2 cycle, with carburetor, coil and coupling. AS 18.
 - 8 H.P. Regal, Model F. B.; 2 cyl., 4 cycle, 4 x 4½ with carburetor, magneto, reverse gear, etc.; complete up to and including coupling.
- 8 H.P. Ferro, 2 cyl., 2 cycle, with carburetor, spark plugs, independent magneto. AS 18.
- 7½ H.P. Hartford, single, cyl., 2 cycle, with carburetor, coil and coupling.
- 71/2 H.P. Stanley, 1 cyl., 2 cycle, with carburetor and coll. AS IS.
- 7½ H.P. Palmer, 1 cyl., 2 cycle, with carburetor, M-B coli oiling system, etc., complete up to coupling. A8 18.
- 7 H.P. Fairfield, carburetor, coil, muffler and coupling. AS IS.
- 7 H.P. Fulton, 2 cyl., 2 cycle, with carburetor, Perfex waterproof ignition.
- 7 H. P. Universal, 2 cyl., 2 cycle; with carburetor, coll, rear starter and coupling. AS 18.
- 7 H.P. Frisbie, 1 cyl., 4 cycle, 6 x 6, with timer ignition, oiling system, everse gear, etc., complete up to and including coupling.
- 6-8 H.P. Tuttle, 2 cyl., 2 cycle, with carburetor, coil and spark plugs. AS IS.
- 6 H.P. Miamus, 1 cyl., 2 cycle, with carburetor, coil and coupling. AS 18.
- 6 H.P. Gaffga, 2 cyl., 2 cycle, with 2 Schebler carburetors, M-B coil, oiling system, etc., complete up to and including coupling. AS 18
- 6 H.P. Hartman, 2 cyl., 4 cycle, 2" bore 4" stroke, with carburetor, coil, reverse gear, coupling, etc. AS IS.
- 6 H.P. Gray, 2 cyl., 2 cycle, with carburetor, coil and coupling. AS 18.
- $5 \frac{1}{2}$ H.P. Detroit, single cyl., 2 cycle, with carburetor, coil and coupling AB 18.
- 51/2 H.P. Ferro, 1 cyl., 2 cycle, with carburetor, coil and coupling. AS IS.
- 5 H.P. Palmer, single cyl., 5 x 6, two cycle, with carburetor and coll. AS IS.
- 5 H.P. Dutton, single cyl., 2 cycle, carburetor, coupling. AS IS.
- 5 H. P. Howard. 1 cyl., 2 cycle, carburetor, coll, spark plugs and coupling. AS IS.
- Two 5 H.P. Lozier, single cyl., 2 cycle, jump spark, carburetor, coil, spark plugs, complete up to and including coupling. AS 18.
 - 5 H.P. Eagle, 1 cyl., 2 cycle, 5 x 6, with carburetor, coil and coupling. AS IS.
 - 5 H.P. Paimer, 1 cyl., 2 cycle, with M. & B. cell, carburetor, oil cups, coupling. AS 18.
 - 2½ Palmer, 1 cyl., 2 cycle, with make and break ignition and coil, carburetor and coupling. AS IS.
- One gear box, formerly used on 250 H.P. Van Blerck engine, suitable for speed boat or hydroplane.
- One reduction gear used with 200 H.P. Sterling, particulars on request.
- Splendid assortment of all sizes, slightly used, reverse gears at attractive prices.

BRUNS, KIMBALL & CO., Incorporated Largest Marine Engine Dealers in the World

Shops, JERSEY CITY, N. J.

Telephone 467 Watkins

Branch Store: Bourse Building, Philadelphia, Pa.

THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 6 cents per word, minimum \$1.50. If an illustration is used, the charge is as follows, which includes the making of the cut:
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Cut 2½ inches deep, seven inches wide. \$20
Terms: Cash with order

Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MoToR BoatinG.

Classified advertisements set entirely in small light face type. No extra charge for capitals. Bold face type used at display rate, \$12 per inch, single column



No. 7919. For Sale. Handsome Herreshoff designed and built express cruiser, 62' 4" x 61' x 11' 3" x 3', built 1917, speed 15-23 miles enclosed bridge, 2-G. R. Sterling. Double stateroom and two berths in saloon, sleeps 4-6. Completely appointed, all best quality, owners spent money lavishly 1922 putting boat in finest condition. HENRY J. GIELOW, INC., 25 W. 43d St.

WE HAVE FOR SALE

One four cylinder marine type 125 h.p. Hail-Scott motor, Splendid condition. Looks like new and runs just as good. Price

Price

We are distributors for Hall-Scott, Speedway, Clay Workboat Engines, Paragon Reverse Gears, and Hyde Propeller Wheels, Let us quote you.

HACKER BOAT COMPANY Detroit, Michigan

Standard engine, 32-37 H.P., right hand; used three seasons; condition perfect and guaranteel; with complete propeller outfit and extra parts; can be seen in yacht; am installing a six cylinder engine of same make. Price \$1100. E. vom Hofe & Co., 92 Fulton Street, New York City.

FOR SALE—Runabout 25' 6", beam 5' 0", hull cedar V-bottom decks mahogany. Engine 30-40 H.P. 4 cylinder Victor Lowe. Bosch magneto. Seating capacity 8, automobile control, clutch forward and reverse. Speed 18 in P. L. Price \$750, includes complete equipment. Address C. E. Rasche, 1371 Shakespeare Avenue, New York City.

Hull: 21x20x5x2. All piano finish mahogany Finest construction and condition. Cost \$2,600 Price \$600. Ford, 41 East 42 St., N. Y. C

WANTED-Hall-Scott marine engine, L. M. 6 or L. M. 4, at once. State condition, particulars, lowest cash price, etc. Box 51, MoToR Boating.

Wanted—One used motor boat, as good as new, or a new one that will be ready to go into service for early navigation on the Great Lakes, to be used as a ferry passenger boat, between Munising and Grand Island, Michigan, on Lake Superior. 50 to 60 feet over all, 14 to 15-foot beam, speed not less than 12 miles per hour, to seat under cover in the main cabin at least 25 to 30 people. Prefer one with oil-burning engine of the Diesel type. Must have toilet facilities. Independent lighting system. Parties answering give price and photographs or blue prints, addressing Mr. C. V. R. Townsend, Land Agent, Negaunee, Michigan, care The Cleveland Chiffs Iron Co.

For Sale—Speedway engine, 6 cyl. 140-H.P. 8½" bore, 10" stroke, excellent condition. Address, H. Chrystal Iron Works, 98 VanDyke St., Brooklyn, N. Y.

For Sale—Power cruiser 47 ft. x 12 ft. x 3 ft. 9 in. Built August, 1920. Speed 12 M.P.H. 4 cyl. Sterling engine. Separate electric lighting plant. Mahogany finish below and on deck. 3 toilets. Crew's quarters sleeps two. Owner's quarters, two staterooms and main saloon, sleeps seven. Bridge deck control. Engine room in separate compartment under. In Al shape, fully found and now in commission. For further particulars address MoToR BoatinG, Box 35.

For Sale—My 26' runabout with 100 H.P. Hall-Scott motor has been used only season. A wonderful boat at a real bargain. Wm. C. Wittmond, 4119 Peck St., St. Louis, Mo.

Steam tow boats fitted for passengers, 60-65 and 80' coppered surface condensers. Composition wheels. Launch 60'. 25 tons steam. Photos. Price \$2.000 each. Frank E. White, Riverside, R. I.

FOR SALE—Subchaser, 110' x 15' 5".
Overhauled and equipped. Two electric plants.
Double set batteries. Exceptionally tight and
seaworthy. Excellent condition throughout.
Wireless and other equipment. Built by Elco.
Accept 5% original cost.
Edw. Samara, 154 E. 175th St., New York.

FOR SALE—Magnetos, 4-6-8 cylinder. Single and double spark. Independent and dual with coils. Foreign, Boach and others. Guaranteed condition. Very reasonable. Box 52, MoToR Boating.

Advertising Index will be found on page 150

REPAIR PARTS

We can supply you with parts for old type Jencick, Dusenberg, Loew-Victor, Automatic, Hitchcock, Lamb, Craig, and many others at reasonable prices.

BRUNS, KIMBALL & COMPANY 153 West 15th Street New York City

Free Illustrated Literatures, New Rebuilt Engines, Outboards, Clutches, Gears, Joints, Pumps, Hyde Propellers, Stoves, Cruisers, Runabouts, Canoes, Camping Outfits, Cana-dian Boat & Engine Exchange, Toronto.

For Sale—New and rebuilt marine engines. Write for list of bargains. Anderson Engine Co., 4032 No. Rockwell St., Chicago, Ill.

For Sale—50' x 14' 6". Harbor tug or Supply boat. With two cylinder 45 H.P. Gulow-sen-Grei-Crude-oil engine. Joes clutch and electric starting device. Separate engine with air compressor, boat fully equipped and ready for work, boat, engine and equipment new-1921. Will sell for one-half of actual cost. Also one large size pentwater lifter, with twin oscillating cylinders for steam—Kriebel make, used only one season. Frank J. Albright Company, La Pointe, Wisconsin.

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THE BADGER MOTOR CO. Milwaukee, Wisconsin

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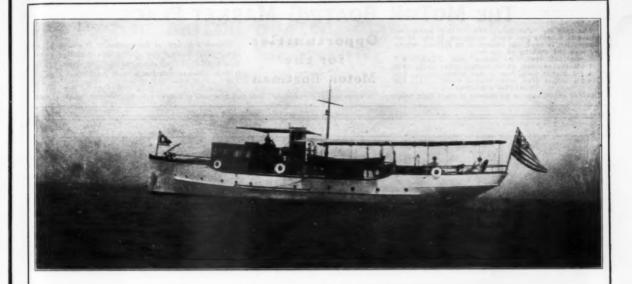
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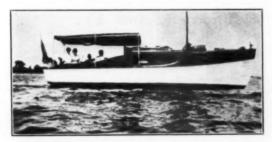
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No. 4106—For Sale—Seagoing, flush deck motor yacht, 75' x 14.5' x 4.6'. Speed up to 12 miles, 75-90 H.P. 6 cylinder heavy duty Sterling engine. Winton independent 5 K.W. generating set; hot water heating plant. Dining saloon in deckhouse; two double stateroooms, bathroom and main saloon below aft. Exceptional deck space. Mahogany finish throughout. Construction unusually heavy and of the best. Opportunity to purchase spiendid seagoing craft in first-class condition. Fitted with all conveniences at exceptionally low figure. For plans and further particulars apply to Cox & Stevens, 25 Broadway, New York. Telephone No. 2700 Whitehall.

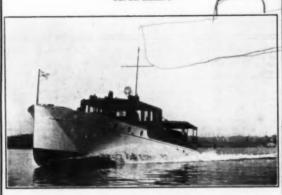


For Sale—Palmer built, 30' crufser. A1 condition. Speed 9 miles. Mahogany interior and trim. Full inventory. Full headroom. Don't pass this up if you are looking for the finest of her size affoat at a very reasonable price. S. Q. Brown, 521 Central Avenue, New Haven, Conn.



For Sale or Charter—Attractive 70' twin screw house boat: beautifully furnished. Beam 17', draft 3', mahogany deckhouse 27' x 10'. Five staterooms, two baths, all new furnishings and new equipment throughout. Inspection New York City. Address your broker or owner, Box 65, MoToR BOATING.

FOR SALE and QUICK ACCEPTANCE TWIN SCREW EXPRESS CRUISER "KADILLA"



A magnificent yacht, fully equipped, in A-1 condition and will stand the closest investigation into every detail of construction and appointments.

Length over all, 49 ft.; beam, 10 ft. Gross tonnage, 17. Net tonnage, 14. Designed by Carlton Wilby. Maximum speed, 24 miles. New Engines, 2 Van Blerck, 150 H.P. each, run only sixty hours. Sleeping accommodations: Owners, 8: officers and crew, 3. Cabins fully equipped. Kitchen fully equipped. Running water, electric light, toilets, etc.

In storage at Petersen's Yards, Nyack, N. Y. Immediate possession. Arrangements can be made to inspect this yacht.

John G. Horton, Owner 870 N. 19th Street Philadelphia, Pa. Phone—Poplar 6262J

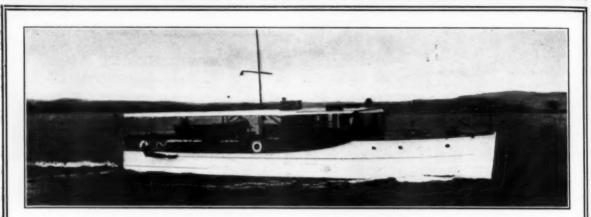
When writing to advertisers please mention MoToR Boating, the National Magazine of Motor Boating, 119 West 40th Street, New York

THE MOTOR BOATING MARKET PLACE

Opportunities for the Motor Boatman

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mts set entirely in small light face type. No extra charge for capitals. Bold face type used at display rate, \$12 per inch, single colum Classified advertise:



FOR SALE—Unusually attractive high-speed cruiser. Built by Herreshoff Mfg. Co. and rebuilt by Nock. 62 ft. 4 in. x 61 ft. 4 in. x 11 ft. 3 in. x 3 ft. Everything in first-class condition. The boat and equipment very complete. Two 6-cyl. GR Sterling engines in first-class condition. Boat inspectable at Nock's Yard. Any particulars required will be furnished by Frederic S. Nock, East Greenwich, R. I.

FOR SALE—30 H.P. Kalenberg complete and as good as new. Also other small motors from 2 to 20 H.P. Jesiek Bros., Macatawa, Mich.

FOR SALE—Raised Deck Cruiser, 34 x 9.
Four cylinder, 4 cycle motor. Ports and drop windows. Complete galley, spring berths; aleeps four. Running water to sink and basin forward. Toilet, electric lights, exceptional locker space. In first-class condition. Price \$1800 if sold before fitting out. Inquire Box 64, MoTor Boating.

WANTED—45 ft. Elco Cruiser. State low-est price. Give full description, year built and where boat can be seen. Address Box 63, MOTOR BOATING.

1—Model "B" Red Wing, complete with electric starting system, new.\$700.00

1—8 cyl. Model "C" Van Blerck, complete with many extra parts..... 450.00

1—4 cyl. 4 cycle, 22 H.P. Gray, complete...... 500.00 RED BANK YACHT WORKS Red Bank, N. J.

"GENUINE CROSBY AUXILIARY CATS"
Good, used, sound-tight boats, direct from
"Crosby" shops. Best available shown here.
E. V. ROSEMOND—Phone 64-R
"Crosby" Catboats "of the better kind."
No. 220 Fourth Street
"ON, 220 Fourth Street
GREENFORT Long Island, N. Y.

Wanted—Second-hand, a 7 A Hall-Scott aero-plane motor, cheap. Want to use parts for other motor. Walters Bros., Whitby, Ont., Canada.

For Sale—Double Ender 24' x 7' x 2' 9" canopy top over cockpit. 14' x 5' 6", seats 20. Continental engine, 4-cyl., 334 x 5—15 miles. Pretty boat. Photos. G. M. Booth, 4th Apt., 1247 N. Clark St., Chicago, Ill.

50-ft. Speedway boat for sale; all mahogany; fully equipped; seen at Lawley's; also Speedway alcohol range, 6-burner top, oven and broiler; 1 Matthews 1 k.w. generating set. E. L. Stevens, Kittery Point, Me.

FOR SALE—Raised deck cruiser, 40' x 11' x 2' 8". Headroom 6' 2" throughout. Very roomy, sleeping six. Good sized tollet, with wash basin, large pantry, large galley with sink and ice chest. Electric lighted throughout. 1921 Scripps motor in perfect condition with self-starter. Gas tanks for 120 gallons. Fully equipped, cushions inside and out. Anchor davit and boat davits. Boat handled easily by wife and self. Located near Boston. Address Box 62, MoToR Boating.

FOR SALE—A twenty-five by eight V-bottom raised deck cruiser in first class condition. 14 H.P. 2 cylinder 2 cycle Mainson motor. Speed 9 miles. Equipped for salt water. Full equipment. Best offer over \$700.00 takes it. A. Stegmann, 1541 Miller Street, Utica, N. Y.

POSITION WANTED—First class boatman, with wide experience, wants position as captain of power yacht; can give good references. "X. Y. Z.," care MOTOR BOATING.

during our fifteen years in business has a Masters-Rebuilt engine come back with a kick, although we guarantee them in every way and have the responsibility to make good if necessary. If you want a good serviceable power plant at the lowest cost, an engine that looks and runs like new, ask us. All sizes, all makes. Write for latest bargain list

W. L. MASTERS & CO.

231 North State Street, Chicago, Ill.

Authorized Distributors in Chicago territory for Sterling, Kermath, Stearns, Frisbie, Universal, Evinrude, Johnson, Joes Gears and Hyde Propellers

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39' x 10' 6'' Frishle 16 H.P. engine, seaworthy, carries 40 passengers on deck: toilet, galley, running water, ice box, hair mattress, new mahogany cabin, plate glass windows, 6' headroom, electric lights, one man control, fully equipped, \$2,000. J. Schatz, 1926 Lexington Avenee, New York City.



No. 1821—For Sale—V-bottom express runabout, 30' x 6' x 2'. Well built, handsomely finished, roomy cockpit aft, small one seating two forward. Sterling engine, speed up to 30 miles. Has had comparatively little use and can be bought at reasonable price. Apply John G. Alden, 148 State Street, Boston.



No. 1051—For Sale—At low price. Very attractive power croiser, 30' x 7' x 3'. Craising accommodations for two, toilet, galley, roomy cockpit. Sterling engine, speed up to 13 miles. Apply John G. Alden, 148 State Street, Boston.



For Sale—Raised Deck Cabin Cruiser, 32' x 2' x 30". Launched 1916. New 1921 Peerless 25-35 H.P. motor. Electric starting and lighting, four berths, toilet, galley, complete equipment, excellent condition, at Detroit. F. Whitehead, 1657 West Lafayette Boulevard, Detroit, Mich.



ROAMER III—New standardized express cruiser 54' x 11' built by the Great Lakes Boat Building Corp., delivered in June, 1922. Boat is mahogany planked. Equipped with two re-built 8 cylinder Van Blerck motors with Philbrin ignition. An opportunity to buy a new express cruiser at a reasonable price.

Earl Holley, Holley Carburetor Co., Detroit, Michigan.



For Sale—Ocean runabout "Ella," 25' x 5½' x 27" V bottom. Sterling 50 H.P. motor. Speed 20 miles. Auto control, mahogany cockpit, cypress hull, fine accessories, all around consistent outfit. Motor in good condition. Inspection at New York. Reasonable. Write for particulars, N. Johansen, 203 Hamilton Avenue, Brooklyn, N. Y.

Navy Radio Compass Receiver, Type S. E. 712. Practically brand new, never used—too large for present requirements. Same type as used by Gov-emment stations. Will sell for \$75. F. W. Horen-burger, 4263 Byron Arenne, Bronx, New York

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FOR SALE: Cabin cruiser, 26 x 7, 12 h-p. Lathrop, toilet, sink, 30-gallon water, 2 gas tanks, 2 spring bunks, stoves, ice box, mast, tender, fully equipped for cruising, \$450 cash. John Larsen, 64 Saratoga St., Springfield, Mass.

FOR SALE—Wilton Crosby Cabin Cat. No power. 26-6. Perfect condition. W. P. Uhler, 264 Mott Street, New York City.

WANTED—U. S. Navy Steamer, 40 to 50 feet. State price, location and condition, MoToR BOATING, Box 61.

FOR SALE—A 36' Speedway Runabout Sedan. Equipped with six cylinder Model N motor. This boat can be seen at its birth, Manitou-on-the-Hudson. Address J. N. Til-den, Peekskill, N. Y.

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Mahogany Runabout. One of the FINEST
LAWLEY built and RAYMOND designed.
40' x 7' 8". 70 M.P.H., with 900 H.P.

Built for the International Races.
Complete with shafts, struts, bearings and joints for up to 2000 H.P.

Will make a wonderful Express cruiser,
50 miles per hour with 600 H.P. Looks like
Miss Detroit VI on page 24 of February
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reasonable offer or trade for a Schooner or
Sloop up to 50' waterline without engine.
Cannot be duplicated for \$15,000. Delivery
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Also a pair of 300 H.P. 8 cylinder racing
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The names of all students who have successfully submitted papers for the Piloting Course, during the month of

ricessfully submitted papers for the Piloting Course, during the month of February are printed below:
Lesson No. 10: L. R. Philpott.
Lesson No. 11: C. A. Philpott, L. R. Philpott, Arthur Peay.
Lesson No. 12: John Lang, Alfred Alexander, S. M. Bradley, Arthur E. Burgess, Arthur Peay, T. S. F. Steiniger.
Lesson No. 13: Roy E. Williams.
The names of all students who have successfully submitted papers for the Dead Reckoning Course, during January and February are printed below:
Lesson No. 1: B. Powell Boell.
Lesson No. 2: B. Powell Boell, L. A. Kumm.

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Lesson No. 3: B. Powell Boell, L. A. Kumm.

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Schnitzer.

Lesson No. 7: B. Powell Boell, M. Cibener, Robert E. Cunningham, W. E. Roberts, David Schnitzer, J. K. Sexson.

Lesson No. 8: B. Powell Boell, M. Cibener, K. DeHart, W. E. Roberts, C. C. Robinson, J. K. Sexson, W. A. Smelser.

Lesson No. 9: B. Powell Boell. Elmer L. Belanger, W. A. Cornell, I. S. Ellsworth, W. E. Roberts, C. C. Robinson, F. W. Salmon, J. K. Sexson, W. A. Smelser.

Lesson No. 10: R. Andren, V. C. Baird, Percy S. Benedict, Elmer L. Belanger, Ralph Christie, W. A. Cornell, I. S. Ellsworth, K. DeHart, L. P. O'Keefe, C. C. Robinson, E. Roxby, F. W. Salmon, J. K. Sexson, M. B. Stelle.

Unique New Type Pump

M. S. Cornell, Jr., Middletown manufacturer and Treasurer of the Frisbie Motor Co., Middletown, Conn., has invented what would seem to fill a long felt want in the way of a circulating pump for internal combustion engines. This pump is, of course, being used on the new Type T Frisbie Motors but could be used to the advantage of the consumer wherever circulating pumps are used. wherever circulating pumps are used. Commodore Cornell's interest in the sport of Motor Boating is such that we do not believe anyone would find it very

difficult to make the necessary arrangements for the use of his device.

This Duplex Gear Pump, as it is called, is so simple that the wonder of it is, as with a good many inventions, that no one has used it before, especially in view of the trouble experienced with the ordinary type of gear pump wearing out in salt or sandy water and the practical impossibility of lubricating the usual type of gear pump with anything out the liquid pumped. As a good many of our readers pumped. As a good many of our readers know, salt or sandy water does not make a very good lubricant with the result that the gear teeth in the ordinary gear pump wear rapidly until the idler gear in the pump driven by the other gear pinned or keyed to the pump driving shaft jams with the said driving gear and away goes the pump shaft drive, together with any other auxiliary drives, such as generator or magneto, which may be at-

tached to it. The Duplex Gear Pump overcomes these difficulties by furnishing a main pump in half of the housing and a set of driving gears or an auxiliary pump in the other half of the housing these two sets of gears being separated from RIGGS YACHT AGENCY

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one another by a common wall or partition through which passes the common driving and idler shafts to which are keyed all four gears. The gears contained in half the housing are used in the regular manner as a gear pump while the gears in the other half of the hous-ing, which can be lubricated, are so meshed with one another as to always keep the pumping gears in mesh and free from frictional contact with one another so that the pumping of salt or sandy water does not cause much wear on the pumping gears which never come in con-tact with one another, simply running in mesh. Any wear caused by excessive sand passing through would simply in-crease the clearance of the meshed teeth in the pumping gear, which, even if they ween the pumping gear, which, even it they eventually wore exceedingly, could never override one another and jam because of being definitely located by the set of driving gears referred to in the other half of the housing. Also the set of lubricated driving gears may also be used intermittently as a bilge nump, fire hose or wash down hose without effecting the life of the nump to any extent. It is the life of the pump to any extent. It is quite apparent that this Duplex Gear Pump, even under these conditions with it's additional driving gears which can be lubricated, will have a good many times the life of the ordinary type of gear pump in which the pumping gears are also the driving gears and which there-fore jam when they become worn with the results mentioned above.

Advertising Index will be found on page 159

The New Standardized HALL-SCOTT-powered SEA SLED



The new standardized 25 ft. single-engined single-propeller Sea Sled runabout. 125 H.P. Hall-Scott.

WITH their constant pursuit of the highest in quality and efficiency, it is certain that Sea Sled engineers are unusually competent judges of marine engine values and characteristics. They have installed and tested practically all the prominent makes of high grade engines. Their choice of a power plant for their most important standardized model is the 125 H.P. "Balanced Four," Hall-Scott.

This is the first Sea Sled ever designed to be powered with a single engine and driven by a single propeller. It is intended for high speed service where the engine will be run with throttle wide open hour after hour. Dependability in the highest degree is absolutely essential for the power plant, together with economy in fuel and light weight for the power developed.

Hall-Scott Marine Engines are designed especially for such work.

They stand up consistently in service which would quickly ruin older and heavier types of marine engines.

Perhaps you have a boat which requires unusual engine ability. Let us talk it over with you.

Write today for catalogs

4 Cylinders 125 H.P. Weight 1100 lbs.

6 Cylinders 200 H.P. Weight 1300 lbs.

Single and Twin Screw Plants in stock at

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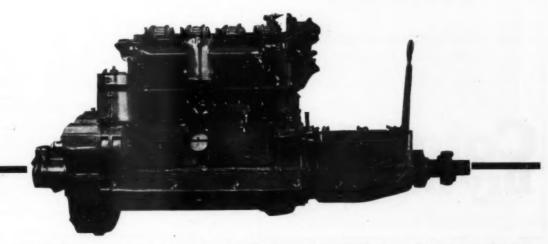
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-the weatherproof battery that won't die when a wave slaps it!



Just think of all this Steel Case Columbia "Hot Shot" Battery means to you in better ignition and greatly prolonged service!

-and costs no more than you are used to paying for ordinary fiber case batteries.

Super-Durable-Waterproof-Unbreakable

3 Sizes Now

ColumbiaSteelCase"HotShot"No.1461 4 Cellpower-6 Volts-4 Cells in a Row

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Insist Upon Columbia

NATIONAL CARBON COMPANY, Inc. Long Island City, N. Y.

Atlanta Chicago Cleveland Kansas City San Francisco

Yard & Shop

(Continued from page 46)

Kermath Established in Canada

A recent incorporation is the Kermath Manufacturing Company of Canada, Ltd., with a complete store and service station at 11 Wellington Street, Toronto, Ontario. This branch is to take care of the entire trade in the Dominion of Canada. The establishment of a branch in Canada has many advantages from the standpoint of service, prompt deliveries and also the fact that the Canadian price including the duty and freight is quoted f.o.b. Toronto. L. S. Usher is Secretary and Treasurer of the new company and is in charge of the general management. He is extremely well and favorably known throughout the Canadian trade and will make a most valuable addition to the Kermath Company.

Eveready Focusing Searchlight

The National Carbon Company, Inc., has put on the market a new and powerful flashlight capable of throwing a penetrating electric beam a distance of 500 feet. This light is called the Eveready Focusing Searchlight and is considered to be the most intense light concentrated in a flashlight for

to be the most intense light concentrated in a flashlight for popular use—three thousand candle power at the focal point in a broad beam of piercing light.

The Eveready Focusing Searchlight can be obtained in either a nickle or vulcanized fiber case. Both types are equipped with a shock absorber to protect the lamp, have an octagonal non-rolling lens ring, flash and permanent contacts and also have one extra lamp installed in the bottom cap. This new and improved flashlight combines the best features of the Eveready line.

New Sterling Catalog

A very handsome catalog has been published by the Sterling Engine Company of Buffalo, N. Y., in which are described the new Sterling Sea-Gull and Viking engines. The engines described are different, they are modern, sturdy in construction, clean in operation, quiet when running, and dependable in service. These engines are particularly suited to hard, fast service and are commended to the attention of all who require power plants of this type.

In conjunction with the Northeast Electric Company who furnish electrical equipment on Sterling engines, a special race was arranged last year and motion pictures were taken. These pictures are very good and are available for use at yachting and boating social events. Its length is about 1,200 feet and the Sterling Engine Company will be glad to loan it to responsible clubs on request.

to responsible clubs on request.

Elto Leads in Southern Races

Outboard motor racing is one of the sports enjoyed by winter resorters recreating in the balmy south. Many or these races take place at big resort centers on the Atlantic Seaboard

races take place at big resort centers on the Atlantic Seaboard and on the Gulf, as well as at inland lakes.

The Elto Outboard Motor Company has just received word that an interesting race took place at St. Petersburg, Florida over a four-mile course on Tampa Bay. The sea was so heavy that a number of motors dropped out of the race-some refusing to start at all. The Elto Light Twin finished first by a margin of five minutes against a number of competing makes. The winning motor was owned by Ballard Brothers of St. Petersburg, Florida.

Winning races however, is no new thing for the Elto, for this light and powerful motor was also the victory sweeper

this light and powerful motor was also the victory sweeper in a number of official races throughout the country last year.

Johnson Adds Boat and Canoe

The Johnson Motor Co., South Bend, Indiana has just announced to their dealers a new boat known as the Johnson De Luxe Boat, and a new type of water craft known as the Johnson Sport Canoe. Both have been designed and produced through the collaboration of Johnson engineers and expert boat and canoe builders. They are not offered in competition with the product of the better boatbuilder, but to satisfy the man or woman who wants something different and of the highest possible quality in materials, skill of workmanship, and beauty of finish. Both boat and canoe are supplied only in solid mahogany finish. in solid mahogany finish.

(Continued on page 138)

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Grow Young at MIAMI BEACH

THE great charm of all Florida in general and of Miami Beach in particular is its eternal youth, its compelling suggestion to enjoy life to the fullest degree, with the balmy air and the sunny skies that know no clouds.

Miami Beach is touched by the Gulf Stream which gives it a delightful climate the year around, warm and clear for the winter months and more temperate than many northern cities throughout the summer. Every outdoor sport and recreation can be enjoyed at all seasons.

The popularity of Miami Beach is growing tremendously with each passing season. Visitors are multiplying, property values increasing and permanent homes becoming more and more numerous as transient guests decide to become regular residents.

The property has been carefully selected and restricted. You can have a house built under expert supervision and finished ready for occupancy without requiring your personal attention.

Write for complete data and plans.

Carl G. Fisher, Miami Beach, Florida

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Ready for Delivery-Now

I F you want to buy a Baby Gar this spring, now is the time to place your order. We have six of these famous boats ready for spring delivery. This stock will not last long—better investigate at once so you can have the full season's use of your new boat.

As a boat Baby Gar has been more completely proved in speed and seaworthiness than any other boat of its type. It has won the biggest trophies of the boat racing world. Built by the same man who produced all of Gar Wood's racing successes—powered with the same type of motors, and fully guaranteed in workmanship, equipment and performance.

You can back your Baby Gar to win any race you care to enter. But it isn't only a racing boat. A big comfortable substantial runabout 33 ft. long, seating eight persons, beautifully finished and as safe and easy to control at any speed as a motor car on a concrete highway. This is the ideal owner's tender for fine yachts, as well as a practical boat for general runabout use. Furnished complete and ready to run.

50 Miles Guaranteed \$8250

Powered with a 450 H.P. Wood-Liberty Marine Motor. (1550 cu. in.) Speed guaranteed on 50 mile trial.

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45 Miles Guaranteed \$7250

Powered with Detroit Marine-Aero Engine (Fiat type) 300 H.P. (1350 cu. in.) Speed guaranteed on 50 mile trial.

Write today for full details and delivery dates. Attractive proposition for dealers.

N. Y. Territory Representative and Service Station, Caleb Bragg, Port Washington, Long Island
Phone Port Washington 257

Chicago Territory Representative, Webb Jay, Standard Oil Building, Chicago, Illinois



7960 Riopelle Street

Boat Building Plant at Algonac, Mich. Detroit, Mich.

Advertising Index will be found on page 150



Speed Increased

from 121/2 to 25 M.P.H.

without increased fuel consumption

Mr. Hall's letter tells the story—a substantial 52 footer of ordinary speed changed into a 25 mile express cruiser by the installation of a 450 H.P. Wood-Liberty Marine Motor. It is typical of the improvement you can make in your own boat by installing this motor.

The big point is that you can get exhilarating speed without excessive fuel consumption. It means for you a new degree of interest in boating and greatly increased value for your boat, with a dependable motor that is built for harder service than you will ever give it.

There isn't a finer designed or better built motor. It is the power plant used by Gar Wood in all his world's record boats—Miss Detroit, Miss America I and II, Gar Junior I and II, Baby Gar, etc. It is the foundation of Mr. Wood's success in racing.

AMERICAN STERLIZER COMPANY
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December 13, 1922.

Mr. Gar Wool, Algonac, Michigan.

Dear Mr. Wood :

At the close of a most successful yachting season, I am taking this opportunity to express my complete satisfaction with the perfect performance and operation of the 12 cylinder Liberty Motor installed last June in my yacht, Henrietta II. This boat is 52° long with a beam of 12° and a grose tennage of 27. She was previously powered with an 85-135 H. P. medium duty marine engine which gave her a cruising speed of 10-11 miles and a maximum of about 12-1/2 miles with a fuel consumption of about one mile per gallon.

We now cruise 18-20 M, P. H, with a maximum speed of 25 and fuel consumption the same. You can readily appreciate this installation has put this boat in the express cruiser class. The writer's son having had considerable engine experience wishes me to express his highest appreciation of the absolute dependability of this motor at all times and being Engineer of Henrietta II is very proud of the fact that she made 1000 miles St. Lawrence River cruise right after the new motor installation without a single adjustment.

With this enviable record and personal regards, beg

to remain

Yours very truly,

Lot F. That

Commodbre Erie Yacht Club.

This motor has been designed for boat use under the supervision of the best marine engine experts in the country. In view of the records it holds no one can question its success or suitability for marine service. Twelve cylinder Vee-type, cylinder displacement 1650 cu. in., fully equipped including electric starter and marine reverse gear. Guaranteed in every way. Cylinders treated by exclusive process prevents deterioration by salt water.

Write today for full description and prices



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Boat Building Plant at Algonac

Detroit, Michigan

XI

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HOUSE & WOOD

Where Good Boats Are Built— Where Good Service is Given

Are you looking for a builder who will carry out your plans without a single compromise or a single disappointment? Are you looking for a yard where you can get real service the year around, where personal attention is given to every customer and every boat? If you are exacting in these things you will find what you are looking for at the HOUSE of WOOD.

Three generations ago this yard was started in the same location by the grandfather of the present management. The founder built honestly and skilfully; he set a standard which has never been departed from; the traditions of over half a century of successful boat building are an inheritance which we value too highly to make any change in the Wood policy of service and quality.

Without affecting the Wood standard of Service, this yard has recently been reorganized on an up-to-date business basis. New methods, new ideas, and new equipment have been added to increase our service to present patrons and to provide capacity for a larger patronage.

The yard has been practically doubled in size. New buildings have been erected and new equipment installed. The entire yard is owned free and clear, which reduces the overhead cost on every operation.

Best of all, a new and accurate cost system guarantees fair charges for all work. No attempt is made to cheapen or speed up at the sacrifice of results, but every customer is assured the lowest charges consistent with the quality of work performed.

Let us quote on your work. We will be glad to have you visit our plant at City Island, New York City

NEW CONSTRUCTION—Wood, steel or composite construction up to 125 ft., under cover.

MARINE RAILWAYS-150 ton and 300 ton.

 POWER INSTALLATIONS—Complete facilities for engine work and overhauling.

STORAGE—Wood Service insures constant care
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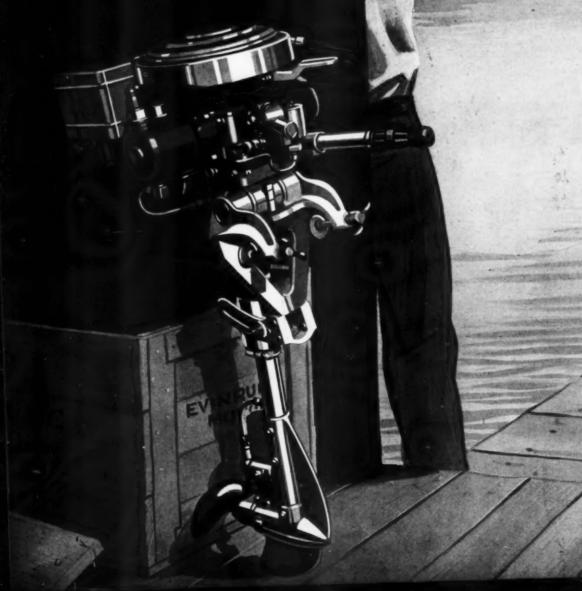
John A. Wood, President

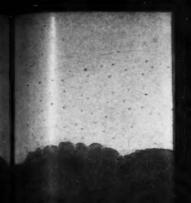
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His Hell





EVINRUDE SPORT TWIN

LIGHT, compact, quiet-running, easy-starting—a "twin"—and an Evinrude! What more could one ask for in a detachable motor?

Climaxing years of experiment and development, the Sport Twin answers Outdoor America's call for a light-weight, two-cylinder motor of genuine Evinrude make

—a motor with all the ruggedness, power and speed that the name Evinrude guarantees.

Sport Twin Features

Weight 40 pounds complete—no batteries or "extras". Two-cylinder—two-cycle—vibrationless—two H. P. Genuine Evinrude magneto, built-in-flywheel—instant starting. Automatic Reverse and Tilt-Up — perfect control of boat—absolutely safe. Genuine float-feed carburetor—wonderful flexibility of power. Glistening in aluminum and nickel—a beauty, and as good as it looks.



The Complete Line of Small-Boat Motors

NOW there's a genuine Evinrude for every small boat use. The sturdy, single cylinder 2 H. P. Evinrude Standard is the motor whose rugged service made the name Evinrude world-famous. Exclusive features of the 1923 model are an automatic reverse, balanced weedless propeller, an oil pressure lubricator, a steering spring and the Evinrude built-in-flywheel magneto.

For sportsmen seeking the greatest power and speed there's the Evinrude Big Twin. Drives an average boat 9-10 miles an hour, light boats much faster. Handles big loads with ease—entire hull free for cargo. Simple, reliable, portable—weighs only 80 pounds.

Evinrude Inboard Motors have been developed for those who want Evinrude dependability in a permanent installation. They are light, simple and compact —easy to install and to operate. Made in one and two cylinder models for canoes, rowboats, dinghies, tenders, work boats and small launches.

Six years ago the demand for better boats led Evinrude into the building of small craft—round and flat bottom rowboats, square and pointed stern canoes, hunting skiffs, even ice boats. Built for strength, comfort and safety—Evinrude quality throughout.

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For family runabout use on rivers, lakes and harbors, for club racing, for tenders of fine large yachts, Albany Runabouts are all you could desire.

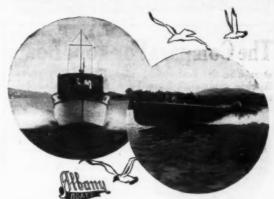
Write for specifications and prices of standardized types. If you would like something special we will be glad to hear your requirements.

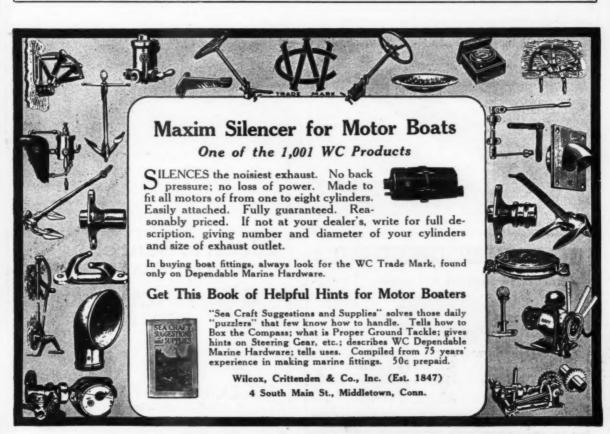
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20 TO 40 M. P. H.

Red Bank Sea Skiffs combine the staunchness and seaworthiness of the skiff with the speed of the modern high power runshout. The ideal inexpensive fast beat, giving all the sport without the expensive fellis and mahogany finish.

26' by 6' Standardized Sea Skiff, seats 10

20 M.P.H. with 50 H.P. 30 M.P.H. with 100 H.P. 40 M.P.H. with 300 H.P.

Makes an excellent yacht tender when fitted with helsting trons. Rull complete except engine, shaft and propeller, \$1200.06 (including tax). Will install your motion for \$150. We are standardising this craft, fitted with 4-cyl. Hall-Scott, 100

RED BANK YACHT WORKS



The Compass For Your Boat

should be the best obtainable. For seventy years Ritchie compasses have been the choice of experienced navigators.

Select the Ritchie for your boat



Our catalog will show you the one best suited for your needs. Send for a copy today.

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The "ALL-ROUND" Boat for Fishing, Picnicing
A sturdy, dependable boat for the whole family
on any lake, pond or stream.
Roomy enough for six or eight people—casily
operated by women or children with absolute safety—and protection to the propeller from hidden rocks, logs or
shallow water. You need the
WATERFORD—need it right away for an early start
this summer.

DISAPPEARING PROPELLER
BOAY CORP.

187 Robinson St., N. Tozawanda, N. Y

The Disappearing Propeller Boat

THE JOHNSON MARINE REVERSE CEAR

Interior Mechanism a Complete Unit

A QUALITY PRODUCT



BUILT FOR SERVICE

INTERIOR-DIRECT DRIVE

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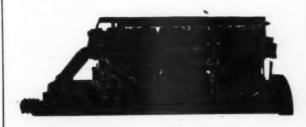
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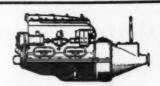
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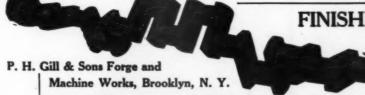
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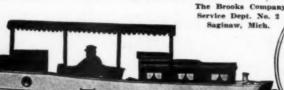




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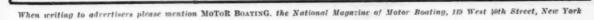
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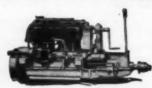


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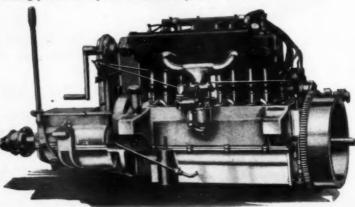
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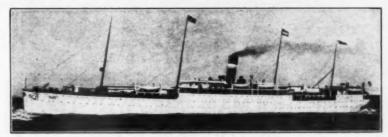
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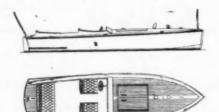
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Boat Building Pioneers Makers of Fine Craft



The Last Journey of Hippocampus

(Continued from page 22)

devoted to the recountal of our San Blas experiences, but in the morning our policy was strictly business. Moving over to Playa de Damas we met Captain Bartling and asked him whether he had altered his determination to buy the Hippo. He had not, but he had decided that the price we asked and which he admitted was a bargain was more than he could afford to pay alone, and so he asked us to carry a letter to his partner in Colon and arrange with him for their joint purchase of the craft. This seemed eminently satisfactory to Jo and me, and, bidding goodbye to Onderdonck, Bartling, and our other friends, we made off in the teeth of a fresh westerly breeze.

This was to be our last day of sailing on Hippocampus.

teeth of a fresh westerly breeze.

This was to be our last day of sailing on Hippocampus, and it was Jo's hope that we might actually sail it. But with seven miles to gain before we could round Cape Manzanillo and head southwest, it seemed wise to save time by employing the motor. And with the seven miles behind us—a rough, tempestuous passage it was between the islands off-lying Manzanillo—the wind petered and we had to keep the motor running. For a time we did shut it off and seemed to sail well with the little remaining wind blowing from just forward of the starboard beam. A protracted inspection showed, however, that whereas we were making about three knots through the water we were gaining nothing on the land—so again we played the trump that beats all adverse currents.

Even with the motor it was slow going against the mighty

beats all adverse currents.

Even with the motor it was slow going against the mighty counter current that sweeps eastward along the Spanish Main, and late afternoon saw us only to Porto Bello, seven hours and tweny miles from Nombre. Then, as on our other approach to this harbor of incessant rains, the wind died completely and the floodgates opened. How it rained! Not even the impressive knowledge that the great Navigator, Sir Francis Drake, had been buried in the sea not far from us mitigated the fact that we were wet and uncomfortable and wished that Porto Bello had never been included in this bedeviled world.

Eating a cold supper under cold drips from the furled mainsail, we plowed steadily toward the lights of Cristobal. If it was a windless night at least it was a calm one, and when at length the rain slackened and the flashing eye of Toro Point showed through the gloom, it seemed like good sailing

Eating a cold supper under cold drips from the furled mainsail, we plowed steadily toward the lights of Cristobal. If it was a windless night at least it was a calm one, and when at length the rain slackened and the flashing eye of Toro Point showed through the gloom, it seemed like good sailing to me. Jo is happiest when there is wind in the sails, and so am I if we have no immediate objective; but when port is in sight and the clock ticks off the half hours to midnight I must say that I like the sturdy independence of power. This was our only extended night run of the cruise, and in the blackness and the stillness of it it took me back a year to the time when Joe Squibb, Joe Chambers, and I first sighted Panama and counted our long journey from New York ended.

So was this journey at an end, and it was with no little reluctance that, entering Cristobal Harbor and steaming up to our accustomed anchorage off the coalyard, we let the hook go for the last time. Other cruises might begin, but this was definitely ended, and now it only remained to go ashore in the morning, turn our delightful Hippocampus over to her new owners, and take ship for home.

to go ashore in the morning, turn our delightful Hippocampus over to her new owners, and take ship for home. Only that. But what a long "only" it was! Have you ever been two thousand miles from home with something about the size, shape, and general appearance of a twenty-eight-foot yawl on your hands which you have to sell before breaking out the homeward-bound pennant? And, to be more specific, have you ever been in such a position in Colon, where other yachtsmen before you have sacrificed their craft for a tenth their value, and where a prohibitive freight rate leaves the distracted owner no alternative but to sell for nothing at all before the price goes still lower? It is an experience that I trust you will never encounter, because hope, bright at first, is deferred from day to day until it glimmers out and only blank discouragement stares you in the face.

When we left Captain Bartling at Nombre de Dios we carried with us two letters to his partner. One of them proposed joint purchase at my own figure, and the other, which the captain asked me to deliver in the event that his partner did not care to go in with him, authorized the payment on account of Bartling himself of a smaller sum. The second letter was my anchor to windward; for Bartling it was a potential opportunity to purchase Hippocampus for less than any one else could buy her. Naturally, it was to my own interest not to sell the boat under the terms of the second letter until a decision had been reached on the first. Hence, I gave only the first to Bartling's partner when I called on him at his office in the Colon Import and Export Company.



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The Last Journey of Hippocampus

(Continued from page 90)

It is a matter of some annoyance to me that, writing this concluding instalment six months after the events which it narrates, I am unable to recall the name of Bartling's partner. Heaven knows that in our last few days at Colon I mentioned it often enough to Jo to have it indelibly imprinted on my memory. But it is gone, and I shall have to refer to him as B. P., for Bartling's partner.

B. P., for Bartling's partner.

B. P., then, received me with interest, and inspected the boat with pleasure. Things looked rosy. Then, after two days I called at his office and asked him his decision.

"Well," he said, "I can't afford the price you ask, but Jim sent his man down from Nombre this morning to get your boat, and I sent him back with a counter proposal."

"How long has he been gone?" I asked, in consternation.

"Only an hour or so,' said B. P., "and he ought to be back to-morrow night."

"I wish you had let me know he was here." I said, "be-

"I wish you had let me know he was here," I said, "because I have this second letter from Bartling which he instructed me to give you in case you didn't want to go in with him on the deal," I handed over the letter.

him on the deal," I handed over the letter.

He read it, glanced at me as a good-natured cat looks at a succulent mouse, and declared: "Too bad you didn't give me this first, and I would have handed over the money immediately. But now I have made a proposition to Jim, and I'll have to wait until I get an answer to it."

In vain I pointed out that in order to catch the steamer on which Jo and I had already engaged passage I was willing to sacrifice the boat at the lower figure. B. P. asked me how he could know that the second letter did not antedate the first; how he knew that Jim hadn't changed his mind; how he knew, in fact, that Jim had written it at all. This was rather thick, and, after some expostulation, I left his office. It was a hot day.

But I was back again in two days. No, the boat hadn't

But I was back again in two days. No, the boat hadn't returned from Nombre, and B. P. was of the opinion that Bartling had sickened of the business and had decided not

On the third day I asked B. P. how it happened that Bartling had sent the man down "to get your boat" (B. P.'s. own words), if he hadn't expected confidently that I would sell it according to the terms of one letter or the other. B. P. waived argument and stood pat on his statement that would have to receive an answer to his proposition.

With some reluctance he showed me on the fourth day the proposition he had made to Bartling. It was that they buy the boat jointly from me for \$1,200. That was the warmest day of the season.
Our steamer sailed that afternoon, without us

Our steamer sailed that afternoon, without us.

On the fifth day there was still no news from Nombre, and I learned that the good weather of the previous fortnight had departed, and that a storm had been raging so badly to eastward that only one Indian canoe, and no motor craft, had come through in five days. Then Jo and I lost patience—I think we had been showing Jo himself a thing or two in connection with that prime virtue—and interviewed the man-

—I think we had been showing Jo himself a thing or two in connection with that prime virtue—and interviewed the manager of the United Fruit Company.

"How much will you charge to ship the Hippo to New York?" we asked. "We feel as if we had been caught between the hammer and the anvil."

"Oh, not much," said the genial Mat O'Hearn. "How much do you want to spend,"

"Not much," sand the genial Mat O Hearn. How much do you want to spend,"
"Not much," we replied. "Two hundred and fifty."
"That's a lot of money," said O'Hearn, turning the pages of the freight tariff. "It oughtn't to cost you that as deck

But in a moment, busy with a pencil figuring cubic feet and surcharges and so on, he whistled in amazement. "Why, the regular rate is \$700."

"Don't we know it!" said Jo, sadly, and O'Hearn laughed.
"I'll tell you what I'll do," he said. "The Pastores sails
Sunday for New York. Book your personal passage for
that, and I'll have your boat measured, and you can lay her
alongside Sunday morning. In the meanwhile I'll secure
authorization from New York to quote you a flat rate of so
much per lineal foot.' He named a figure. "Is that O. K.?'

much per lineal foot.' He named a figure. "Is that O. K.?' Was it O. K.? It was a godsend. But we kept our fingers crossed, and avoided B. P.'s office lest he suffer a miraculous change of heart and offer us half the value of the boat. And from that day, which was Friday, until Sunday morning when I saw the Hippo hoisted easily to the forward well deck of the Pastores, masts, rigging, and everything intact, I didn't dare to draw a full, deep breath. Then, and only then, I wrote Captain Bartling a formal note, telling him how sorry I was that his old chum and partner hadn't seen fit to honor his offer to purchase the Hippo from the bargain counter. bargain counter.

Even after that we fretted nervously, for the steamer was three hours late in sailing, and I was afraid that the presi(Continued on page 100)

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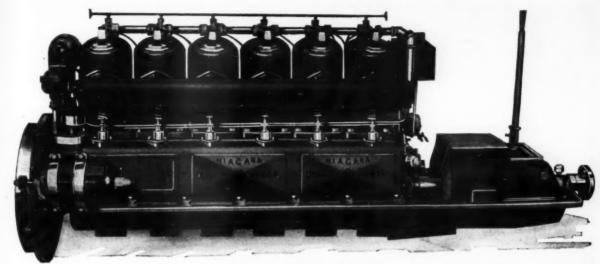
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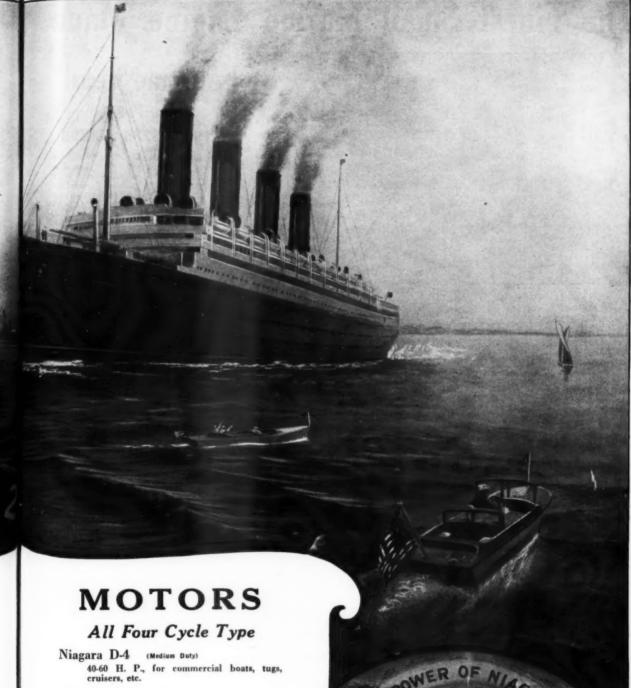
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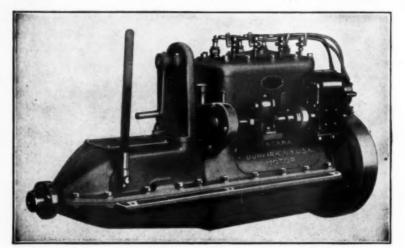
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measure of boating satisfaction with the least initial

measure of boating satisfaction with the least initial expense and lowest possible upkeep.

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Advertising Index will be found on page 150



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The Last Journey of Hippocampus

dent of the United Fruit would suddenly drop down from New York and order the Hippo to be thrown to the sharks. I've been cruising long enough to know that the only thing you can expect is the unexpected. However, the sailing hour came at length, and for the first time in my experience the veteran Hippocampus moved away from a dock under another vessel's power. Cradled and lashed, secure from wind and wave she was homeward hound after seventeen months. and wave, she was homeward bound after seventeen months -stern first.

On the basis of this uneventful, rapid run from Colon to New York, the Hippo must be rated as a sixteen-knotter. Captain Glenn, of the S. S. Pastores, looking down on her from the bridge, said that he had never seen a boat of any size make such good speed, tail-first, and he is a man of wide experience. Our fellow passengers, all of whom thought Jo and me crazy, said they had never seen a cockle shell ride the waves more easily—and the negro deck hands who washed the last coating of Cristobal oil from her sides declared to goodness that they had never seen a boat so much bigger than it looked.

At Havana, where I drank my last damp, delicious daiquiri, a stowaway came aboard the Pastores, and, being attracted by the snugness of Hippo's forward compartment, climbed in and closed the hatch above his head. When, the climbed in and closed the hatch above his head. When, the next day, he was discovered, there was some talk on the part of Captain Glenn of having Jo comply with the law and deliver him back in Havana via the ship on which he had stowed away. But between us we finally persuaded the captain to take this responsibility on himself.

The day came when the fleet of bootleggers off Ambrose Channel showed us that we were nearing home, and on a later afternoon I collected the Hippo from the United Frnit Company's wharf, free and clear of the customs, and started up the river with her.

And then after a night at a municipal pier, there was the

And then, after a night at a municipal pier, there was the Hippo's very last sail under my ownership. Jo, and her cousin, Talman Wisner (who has figured more importantly in Hippo's adventures than has ever appeared from the written narrative), and I composed the crew that piloted her through Hell Gate and out into the Sound, bound for New Rechelle. Rochelle.

In the swirling currents of the Gate we spoke of a wartime aspirant for a Reserve commission who created respect for himself by saying in the early days of enrolment that he had "been on a motor boat when it went through Hell Gate." If he won his commission for it (as I don't doubt he did) what nautical honor could not Hippocampus gain for herself by telling in her own words the perils she has been through? through

But Hippocampus attended to business, and as the broad Sound opened out beyond Throggs Neck only chuckled reminiscently over the happy, carefree days that she has spent in similar inviting waters. In such wise, although she has since passed from my hands to another owner, I would like to have her remembered by her friends.

Close-hauled on the port tack, her white sails diffusing the radiance of the afternoon sun, her Hippocampus Junior towing impudently from a shortened painter, the blue water curling from her blunt bows, she sails joyously homeward.

Vibration Must Be Absorbed (Continued from page 38)

however, provision must be made for flexibility in all direc-tions and this can best be provided as shown in figure two. The usual commercial outboard exhaust connection with gaskets, locknut, and washer is used and a gap of say twelve to sixteen inches in the exhaust line is filled in with a section of rubber steam hose held in place on the pipe end, and outboard connection with brass hose clamps.

In figure three we have a method making the exhaust line flexible which, while effective if taken care of, is not as desirable as either of the other two. It consists of introducing enough 90° elbows in the line to take care of move-

ment in any direction.

This is the common method of taking care of expansion in industrial piping of small diameters and short runs. It is undesirable for the reason that the exhaust line should be as direct and as free of bends as possible. Also it depends on a slight freedom of movement of the pipe threads in the fittings and where rusting is liable to solidify such joints, the scheme might cause trouble. Needless to say, the joints made up between pipe and fittings should not be screwed up as tightly as is ordinarily done and the threads should be liberally coated with a mixture of graphiteand linseed oil for freedom of movement. W. E. M., Philadelphia, Pa.

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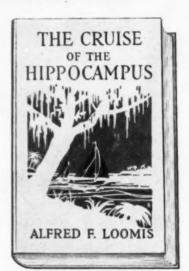
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Any motor is a better motor if it's ATWATER KENT equipped.

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ATWATER KENT MFG. Co. 4962 STENTON AVENUE Philadelphia

Day by Day the Weather Gets Better and Better

(Continued from page 17)

difficult task in cleaning this hardened material from the boat. The proper method is to do the scrubbing in the fall and paint the bottom before the cold weather sets in. The spring task is then merely the applying of several additional coats of prepared bottom paint to give the requisite body to the protective material. After a boat has gone about half way through its useful life, it might begin to leak a little in places. It will generally be found that the caulking material in the seams is beginning to become loose and may require replacing. The proper method of doing this is to clean the seam out entirely with a pointed hook and then brush a film of paint into the joint. Before this gets thoroughly hard the caulking cotton is lightly driven into the seam in such a way that it is gathered in little folds of several inches length and driven in by means of a mallet and caulking iron. This material is driven in slightly below the surface of the joint and the opening remaining can then be filled with a paste made of dry lead powder and varnish mixed to the consistency of putty. This can be smoothed off before it becomes thoroughly hard and will make a good tight seam. This same material can be used to fill up any cracks or holes which may appear in the topsides of the boat.

A liberal use of sand paper is called for in the finishing of the topsides. After the old paint has been burned off, much effort will be required to smooth it all down properly. The first coat of paint should be thinned down with turpentine so that the paint will penetrate into the pores of the wood and form an effective union with it. The succeeding coats will then have a good ground to attach themselves to and there will be little danger of the paint peeling or chipping off. A boat which has been cleaned entirely will require at least four coats of new paint before a sufficient thickness has been built up to make a satisfactory job. On another job which is merely washed down two coats will be ample.

Washed down two coats will be ample.

Bright work is more difficult to handle. It may be that it is in such good condition that it will not require cleaning down. This condition however, is improbable as most boats are left in the condition in which they are hauled out and the bright work deteriorates further during the winter. The removers mentioned before, will clean the surfaces and then it will be necessary to remove stains which form particularly in oak. The generally accepted bleaching agent for this is oxalic acid, and if this is dissolved in wood alcohol it will not be necessary to apply a neutralizing coat to the surface. It is generally advisable to go over the surfaces with a paste filler and stain to color them all uniformly and fill up the surfaces to a smooth finish. Successive coats of varnish are then applied, allowing ample time between each for the material to dry and also smoothing down the surface with fine steel wool or sand paper before the next coat is applied. The secret of applying varnish so that it flows out to a very smooth surface is, never to apply it when the thermometer is under seventy degrees or when the weather is damp and forbidding. A barometer is a handy instrument to consult. When we have a high barometer, the varnish will harden quickly and thoroughly. The opposite condition will apply to a low barometer.

varnish will harden quickly and thoroughly. The opposite condition will apply to a low barometer.

Such other details about the boat as the decks, cockpit interiors, and the interior of the cabins, will all be considered in due time and all repainted, or varnished, or refinished as the individual conditions may require. At this time it is well to give a thought to the little dinghy which was probably stowed away far away from the big boat. While the finishing and painting operations are being done on the parent ship, the little tender should also be treated in the same way, so that it will be ready for its work when called upon.

it will be ready for its work when called upon.

Among the details which are apt to be slighted will be found such things as the awning stanchions, deck hardware, wire rigging, and other metallic fixtures. 'Naturally a brass and bronze equipped boat will not require any attention in this department. The more ordinary one however, will need a can of aluminum bronze paint and a small brush to protect these different items.

bronze paint and a small brush to protect these different items. While all that has gone before has referred more particularly to the reconditioning of the hull and painted surfaces, the wise man undertakes all engine work, plumbing, and electrical repairs before the painting is started. All operations which deal with heavy tools and the mechanical parts of the craft, necessarily involve some soiling of anything with which they may come in contact. Any additions to the electrical wiring should be planned out and done during the cold weather, if possible. Such overhauling jobs as involve water piping and gasoline installations, can also be done before the weather gets warm and makes the painting possible. It is a mistaken notion that a marine engine must be pulled entirely apart each (Continued on page 110)

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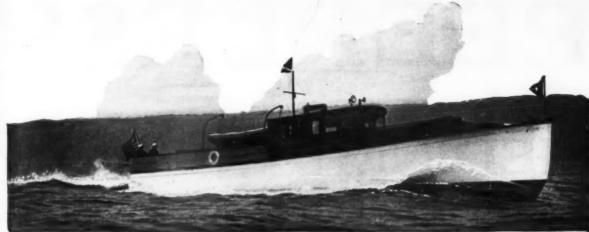
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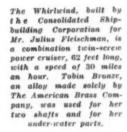
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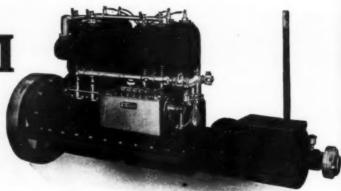
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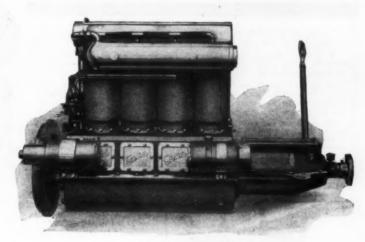
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In brief, the Gray Oiling System leaves nothing to chance. It is unfailing at all engine speeds, and all oil is kept inside the engine, and not thrown around the boat or on its occupants.

Due to the special design of the Cam Shaft, push rods and rocker arms, scarcely a sound can be heard with the ear close to the engine.

The smooth, quiet operation of the new Gray improved Valve-in-Head at all speeds from 200 to 2000 would compare favorably to an electric motor. It runs most economically on low grade gasoline and satisfactorily on kerosene.

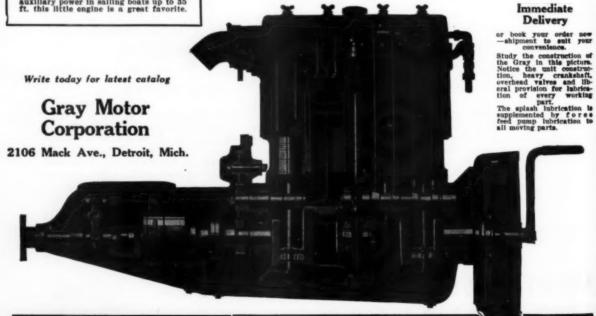
Note The Big Crankshaft

The diameter of the main bearings are: Front 21/8". Center 2 1/16". Rear 2". The lengths are 3%", 2½", 2½" respectively. Crankshaft is 40-50 point carbon steel forging, heat treated and ground.

Special attention is given to the balancing. The shaft is put in rotative as well as static balance on an Akinoff Dynamic Balance Machine, reducing vibration to a minimum.

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Gray Two-Cycle Motors are built in models from 3 to 8 h.p.



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Day by Day the Weather Gets Better and Better

(Continued from page 104)

year and the parts scattered all about the house, the cellar, the year and the parts scattered all about the house, the cellar, the attic, and the boat. Any self respecting marine engine which cannot survive several years of service, such as the ordinary pleasure craft demands of it, is hardly worth the name of marine engine. Naturally all mechanical devices are subject to wear and to the destructive action of the elements. It may well be that the exhaust line has rusted through in parts to such an extent as to require renewal. In this case, it is merely necessary to supply new parts to replace the old and reconnect them as closely as possible to the original layout. An engine will also accumulate a deposit of carbon on the inside of the combustion chamber, which will yield only to the persuasion of a scraper or putty knife. There is no known way of removing this annoying material, other than by scraping when the engine is idle. All chemical carbon removers operate on the principle of solving the carbon and then clearing out the cylinders when is idle. All chemical carbon removers operate on the principle of solving the carbon and then clearing out the cylinders when the engine is again operated. They are more or less effective and will give varying results in the hands of different people. The process of carbon removal by means of oxygen burners is quite effective and can be done without taking the engine down. The simplest and surest process, however, is to take the heads off the cylinders and actually remove all traces of carbon by hand and then one will be certain that the engine is clean. It is surprising how much more pep an engine will exhibit after it has been cleared of carbon.

Another source of annoyance in an engine is poorly fitting

piston rings. It is advisable when an engine is taken apart, to examine carefully into the condition of the piston rings. Any rings which are burned or fit loosely in their grooves should be replaced. In fact, it is almost advisable to replace the rings when the engine is down whether they need it at the moment or not, as it is cheaper to do this work now than it would be to pull the engine entirely down again particularly for this repair. Poorly fitting rings will permit an excess of oil to reach the combustion chamber and form heavier carbon deposits. They will also allow large volumes of the mixture to blow past them and into the lower crankcase. Here the fuel will condense in the cooler atmosphere and serve to dilute the lubricant. This is a most dangerous factor as the oil seems to be present in sufficient volume, but it has absolutely no value It is advisable when an engine is taken apart, to piston rings. the lubricant. This is a most dangerous factor as the oil seems to be present in sufficient volume, but it has absolutely no value as a lubricant when badly diluted. This is one of the main reasons why it is necessary to replace the entire mass of oil at certain definite periods which should not be allowed to be too great. It is lots cheaper to use up an extra gallon or two of oil by more frequently replacing the crankcase lubricant, than it is have to replace heavings and other parts of the mechine itself.

by more frequently replacing the crankcase lubricant, than it is to have to replace bearings and other parts of the machine itself. It might be well to give a thought to the addition of some sort of a water injection device, which will permit of a small volume of fresh water being taken in through the intake manifold along with the mixture, at such times when the engine is running, and is thoroughly hot. These can be easily fitted and it has been definitely shown that the addition of a small amount of water to the mixture will serve to keep the engine free from carbon and pre-ignition troubles. Another point to amount of water to the mixture will serve to keep the engine free from carbon and pre-ignition troubles. Another point to bear in mind is, that the engine should not be washed out with kerosene as many boatmen are apt to do. This habit will tend to dilute the lubricant also and is very destructive to bearings. In order to reduce crankcase dilutions to the minimum amount it is wise to examine into the condition of the carbureter ad-justment, and also that the water jackets are kept at the proper justment, and also that the water jackets are kept at the proper temperature. Many marine engines operate at temperatures which are decidedly too cool for efficiency and an attempt should be made to regulate the water supply so that the proper operating temperature will exist. As an engine grows older the clearances will commonly be found to be greater and often a heavier oil than normal is used. This practice is incorrect as no amount of oil can take the place of metal which has been worn away in an engine. The only proper way to effect a repair in cases of this kind is, to replace the worn parts with new ones, and then use the proper grade of oil. Reverse gears are lubricated in various ways, some by grease and others by oil. These should also be examined and any worn parts replaced.

replaced.

For the benefit of the man who must take his engine down a few words of advice might not be out of order. In addition to cleaning out the carbon and piston ring grooves, perhaps the next most important item in the four cycle type machine is the condition of the valves and valve springs. A point to be made is a careful examination of the spring tension and the replacing of any springs which are below normal. All valves should be cleaned on the stems and faces and then ground into their seats so that they are tight. If they are badly burned or ridged, they should be refaced in a valve facing tool and then ground as before. The operation of the grinding the valve also calls for a certain definite technique. They should be coated with a thin layer of coarse valve grinding compound a few words of advice might not be out of order. In addition

(Continued on page 124)

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On Champion Spark Plugs Chris Smith, who builds them, and Gar Wood who drives them, both depend on Champion spark plugs in all their wonderful boats.

These master speed boat men have definitely proved by experience that Champion spark plugs are better able to withstand the tremendous stress of motor boat racing—are dependable for either the short spurt or the grueling drive.

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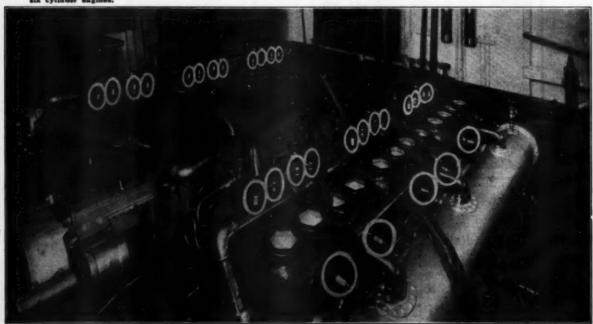
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A typical engine room with 36 Rajah Plugs in the 2 Speedway



Advertising Index will be found on page 150

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tion in the slightest degree. It is particularly necessary to have

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TERMINALS

The chances are you are already using Rajah Terminals on some part of your motor or ignition instruments. For these celebrated terminals have been regularly used for years by many prominent manufacturers of marine engines, automobiles, magnetos, etc.

Universally accepted as the standard type of improved ignition terminal—a terminal that always insures a perfect electrical connection, is easiest to connect or disconnect, and never shakes loose. Fits all makes of spark plugs.

Rajah Terminals are carried in stock by practically all dealers, jobbers and engine manufacturers. If your dealer doesn't have this Rajah assortment, write us.





RAJAH

SOLDERLESS TERMINALS



Thrust Ho

ok Ring

Assemb to Cabi

The biggest little thing you can do to your boat this spring is to equip all your spark plug wires with Rajah Solderless Terminals. You can do it in a few minutes, without solder or tools. It will cost you less than a dollar, and you'll never stop congratulating yourself on the investment.

To attach terminal to cable you simply strip insulation back 3/16", insert wire in ferrule and screw down the pointed part as shown. It can't shake loose or come apart but you can detach it instantly.

If your dealer hasn't stocked this terminal yet, send us his name with 15 cents for a sample. Or order enough to equip all your spark plug wires, stating sizes and types wanted.

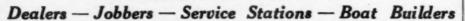
Until May 15th we will give you a Rajah Solderless Terminal for each Rajah Spark Plug you buy—see special offer on preceding pages.



Price, 15c each

The Rajah Safety Nipple is made of flexible rubber. It fits over any plug, terminal or coil connection and protects from water and shock. A little refinement that should be used on every motor—millions in use.

Until May 15th we will give you a Rajah Safety Nipple (or Rajah Solderless Terminal if you prefer) for each Rajah Spark Plug you buy. See special offer on preceding pages.



There is good money for you in handling Rajah Spark Pluge and Terminals. Stop filling your shelves with all kinds of unknown and slow selling spark plugs. Bost owners need the best. Standardise your stock with Rajah Plugs—best for your customers and best for you. Write for our propositions.



Bloomfield, N. J., U. S. A.

23

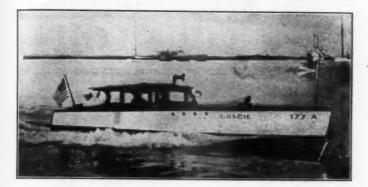
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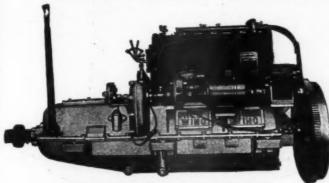
MOTOR WITH POWER TO SPARE



A Typical Red Wing Boat

"Gracie," 26 ft. Water Sedan, Dr. Geo. M. Fairchild, Los Angeles, owner, built by Prewett, equipped with Model B 32-40 H.P. "Thorobred"

You Can't Beat A Thorobred



New Models F and B with pressure ofling syste Paragon reverse gear running in oil bath.

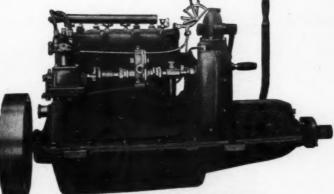
The Red Wing "THOROBRED" Marine Engine is being used in increasing numbers all over the world wherever boats are used, for pleasure, work and service boats of every description. Our 22 years of successful manufacturing methods have perfected a real marine engine at an attractive price. Five sizes, from 10 to 40 H.P.

The 10-14 H.P. THOROBRED "BABY DOLL" engine makes a desirable power plant for the smaller boats, and is being used by some of the most prominent boat builders as standardized equipment.

Write today for catalog and prices

RED WING MOTOR COMPANY

Dept. B., Red Wing, Minn., U. S. A.



Model D, 10-14 H.P. Thorobred "Baby Doll"

Eastern Distributors: Verrier, Eddy Co., 223 E. 42nd St., New York, N. Y.; W. H. Moréton Corp., 780 Commonwealth Ave., Boston, Mass.; W. E. Gochenaur Mfg. Co., 631 Arch St., Philadelphia, Pa.; Hutchinson Bros., Alexandria Bay, N. Y. Western Distributors: Pacific Net & Twine Co., 1213 Western Ave., Scattle, Wash.; Emil Aarup, 5110 S. Main St., Los Angeles, Cal.
Canadian Distributors: Ditchburn Boats, Ltd., Gravenhurst, Muskoka, Ont.; Semmelhaack-Dickson Co., 323 St. James St., Montreal, Que.

Install a STANDARD



The REVERSE GEAR with the

MULTI-CONE CLUTCH

THERE are other good reverse gears but there is no other gear with the MULTI-CONE CLUTCH, an exclusive Standard feature. Therefore no gear can equal the Standard because there is no clutch to equal the Standard MULTI-CONE.

This clutch takes hold like velvet, holds on to the load like a bull-dog and releases instantly when you throw the lever. It actually improves with use and is so easy to adjust that you can do it in a few seconds without any other tools than a screw driver.

And then remember that the Standard is an enclosed gear, running in oil. This reduces wear and noise to the minimum. The case is absolutely oil tight. A ball thrust bearing is built into the case. This gear is easy to install and is built to outlast your motor.

Write today for details and prices giving size and power of your motor.

Model "C" Standard Multi-Cone

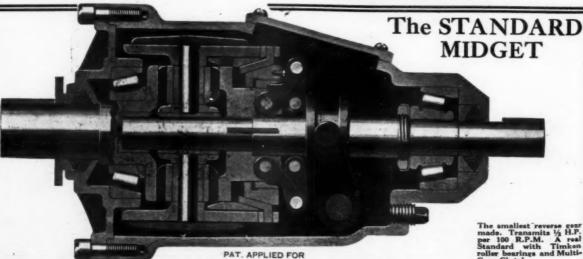
for 100 H.P. Hall-Scott Entirely Enclosed \$100 COMPLETE

STANDARD GEAR CO.

2819 Brooklyn Ave., Detroit, Mich.

The amouth angagement and tre mendous power of the MULTI-CONE is due to its great friction surface. See the four large cones in the illustration and not that all the friction surfaces in at the point after the point of the poi





Advertising Index will be found on page 150



One Boat That Does the Work of Four!

83'x20' 6"x9'5" Tow Boat designed by Ralph E. Winslow, N. A., for the Abitibi Power & Paper Company for use on the Abitibi River in Canada towing booms of pulpwood.

Power plant consists of a six cylinder 350 H.P. Direct Reversible Winton Diesel Oil Engine and an auxiliary three cylinder Winton Air Compressor.

This Tow Boat is now

The "F. H. Anson" is an doing the work formerly done by FOUR smaller steam tugs and, in her first six days of operation, delivered more logs into the booms than all four steamers together did in ten days.

> Economical operation, economical maintenance, 10 - day fuel capacity, steady day-in and dayout dependability - all these tend to make the Diesel-Engine driven Tug the work boat of the future.

Winton Engine Works

New York:-A. G. Griese, Inc., 30 Church St. Los Angeles:-F. G. Bryant, 704 Delta Bldg. Seattle:-H. W. Starrett, Sunset Engine Company

Cleveland, Ohio, U. S. A.

New Orleans, La.: - A. Baldwin Company Washington:-R. L. Fryer, 817 Albee Bldg.

Have You Seen This

Have You Seen This Remarkable New Motor?

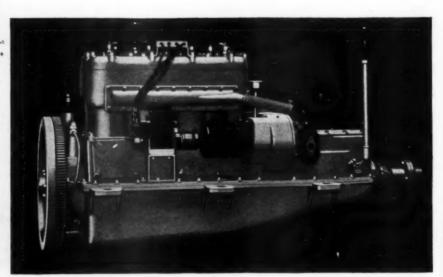
It's the outstanding feature of the year.

35 H.P., weighs only 950 lbs., $4\frac{3}{8}$ " bore by $5\frac{1}{2}$ " stroke. \$775 to \$950.

50 H.P.—\$875 to \$1050.

Make arrangements for your Spring delivery.

"A Kermath Always Runs"



Advertising Indea will be found on page 150



Only \$1.77 per Engine for 13 years!

Quite recently we shipped Kermath engine No. 12891. During the last year we sold only \$22,735.24 worth of repair parts for all the Kermath engines in existence, covering a period of from one to thirteen years. Thus, this represents a total repair parts cost per Kermath of only \$1.77!

This, we believe, is one of the most remarkable, if not the most remarkable, low cost repair record ever established. We firmly believe that no other engine company in the business can show a record even approximating this one.

All of which speaks volumes for the reliability, dependability, workmanship and design of the world famous Kermath marine motors.

Thus, one can see that new or extra parts are a negligible factor in connection with a Kermath motor. For, the original parts incorporated in each specific job are built to last for years and stand the strain of the most severe work.

However, when parts are needed, Kermath parts can be obtained in practically all parts of the world.

The foregoing are several of the reasons why the Kermath motor enjoys such particular popularity.

We would like to send you our new catalogue.

KERMATH MANUFACTURING COMPANY 5879 Commonwealth Avenue, Detroit, Michigan

Take the Trent Waterway Cruise in Your Boat This Summer

This is without question one of the prettiest and most delightful cruises in North America. Over two hundred miles of beautiful lakes and rivers, joined together with all the skill of modern canal engineering, making an ideal improved highway for motor boats.

The Trent Waterway connects Lake Ontario with Georgian Bay on Lake Huron and passes through the wonderful country of Central Ontario. Thriving cities with good hotels, tremendous canal locks, wonderful fishing and a countryside of great scenic beauty, all contribute to the enjoyment of this cruise. The western end of the Trent Canal passes just south of the famous Muskoka Lake country.

A Few Details You'll Want to Know

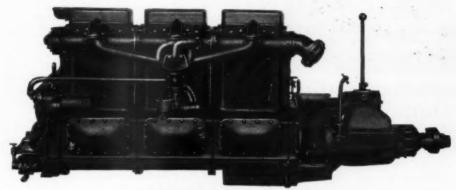
- 1. No lockage charges—good service.
- 2. No customs restrictions.
- Draft—8 feet, Lake Ontario to Peterborough; 6 feet Peterborough to Washago.
- 4. From Washago to Georgian Bay for boats 33 feet length, 9 feet beam.
- Locks at Lake Simcoe 33 feet wide; maximum length steamer or motorboat 118 feet; maximum length wide barge, 104 feet.
- 6. Sunday locking at certain hours.
- Buoyed practically entire route. Going up-stream—keep RED on Right; keep BLACK or WHITE on Left.
- 8. Peterborough and Kirkfield Hydraulic Lift Locks 65 feet and 48 feet, respectively.
- 9. Water and Hydro Electric Development through entire route.
- 10. Excellent camping and fishing grounds.
- 11. Supplies of all kinds available en route.
- Modern hotel and rooming accommodation at all cities, towns, villages and summer resorts.
- 13. From Lake Simcoe, short radial run to Toronto.
- 14. From Orillia or Washago, short rail journey to Muskoka Lakes.

For more complete information address

Secretary

TRENT WATERWAY DEVELOPMENT ASSOCIATION PETERBOROUGH, ONTARIO, CANADA

VAN BLERCK



6 CYLINDER 150 H.P. at 1500 R.P.M.

IMPORTANT ANNOUNCEMENT

Change in the Prices on Model "N" Van Blerck Marine Engines

Effective May 1st, 1923, the following prices will apply to all Model "N" VAN BLERCK MARINE ENGINES. All prices are F. O. B. Plainfield, New Jersey. All prices include the regular standard equipment as listed in the current issue of the Joseph Van Blerck Engine Corporation's catalog, which may be had upon request.

Model	Cylinder	New Price	Old Price
N	2	\$1200.00	\$ 932.00
N	4	1750.00	1500.00
N	6	2500.00	2250.00
N	8	3250.00	3000.00

"When Better Engines Are Built Van Blerck Will Build Them"



30 Church Street

SOLE SALES REPRESENTATIVES

New York City, N. Y.

"Old Town Cances



More Speed from An Outboard Motor

'HE "Old Town" square-stern canoe is espe-L cially designed for portable motors.

It has all the lightness of a straight-model canoe. A portable motor sends it over the water at surprising speed. It is canvas covered, so it never needs caulking.

The "Old Town" method of construction combines strength and sturdiness with lightness. An "Old Town" square-stern will last you for

"Old Town Canoez" are the lightest, strongest, steadiest canoes made. The new 1923 catalog shows all models in full colors. Write for one to-day. It is free.

OLD TOWN CANOE CO. 384 Middle Street, Old Town, Maine, U. S. A.



For Motor Boat lighting or ignition. We say continuous because it takes but a few seconds to recharge this battery, on land or sea, and without the use of even a tool.

It's a positive, SAFE source of electrical current. today for descriptive folder.

Magno Storage Battery Co. Aeolian Bldg. New York

STORAGE BATTERY MAGNO

Day by Day the Weather Gets Better and Better

(Continued from page 110)

(Continued from page 110)
and then rotated back and forth in their seats by means of a brace and screw driver bit or one of the special valve grinding tools now to be had. Placing a light expansion spring under the valve will lift it from the seat whenever the pressure is released, and is desirable. The valve should never be continuously rotated in one or the other direction for many turns in succession. It is more desirable to turn it over a very small arc back and forth, lifting from its seat frequently and setting it down again in a new position. After grinding with coarse compound the valve is removed, cleaned with gasoline and the entire process repeated with fine compound. The seat and the entire process repeated with fine compound. The seat when examined should be of a uniform color with no bright

Another spot that will require investigation will be the main and connecting rod bearings. These should be sufficiently tight so that no trace of vertical motion can be detected when a bar is placed under the fly wheel or under the connecting rod bearings and an attempt is made to lift them. If the engine is taken completely down and it is possible to adjust the connecting rod bearings so that the piston may be free to rotate about them, a correct adjustment can be considered to have been reached when the weight of the piston will slowly pull the rod around on its bearing. Two cycle engines are com-monly made with the bearings cast into the iron housing, so that it is not possible to adjust them. These machines require slightly different treatment. Where the bearings are of bronze, the simplest reach will consist in replacing them, with new slightly different treatment. Where the bearings are of bronze, the simplest repair will consist in replacing them with new ones. The babbitted type, however, will require re-casting into the case. This is done by securing a sufficient quantity of bearing metal and heating this to a proper temperature. The correct heat will be about when a small stick of wood will scorch and smoke without igniting. The old metal is fused out of the bearings and the shaft properly aligned in the opening. A dam of asbestos and fire clay is arranged and the whole zone of the bearing heated with a blow torch. When it is sufficiently hot, the hot bearing metal is poured into the cavity and will quickly flow all around and form a perfect bearing around the shaft. It may be necessary to trim it a little by hand after it is cooled, in order to remove any roughness at the ends. ness at the ends.

A point to watch out for particularly when replacing the various parts is to exercise care in making a tight joint between the carbureter and the intake manifold. A small air leak at this point will cause hard starting and distressing inequalities in the mixture with poor running. In replacing the magneto, the timing must also be carefully observed so that it is replaced exactly as it was previously or so that the spork will take exactly as it was previously or so that the spark will take place at the proper point in the cycle, for each of the several cylinders in its proper turn.

cylinders in its proper turn.

There is a possibility that the stuffing box will require new packing, and this should be attended to before the boat goes packing, and this should be attended to before the boat goes packing, and this should be attended to before the boat goes overboard. A very important item which is frequently forgotten is to replace the pine plug which closes the drain hole in the bottom of the boat. We have seen several boats launched with this detail overlooked and have seen them come back on the marine railway at considerable annoyance and trouble to the yardmen. Any annoying leaks in the bottom should also be searched out and repaired while the boat is still in the yard. In fact, it is advisable to go over the entire craft from stem to stern and examine every detail minutely. Every feature which seems to be in the slightest way in need of attention should be looked after and repaired. There is no of attention should be looked after and repaired. There is no time like the present for all the little jobs which will help to keep the boat ship shape and in good order

Silvery Elto vs. Silver King

The Northerner who is lured to the South to escape the reign of King Winter, takes with him as a most important accessory an outboard motor for fishing, hunting and recrea-

accessory an outboard motor for histing, nunting and recreation on the water.

The Elto Light Twin has proven most invaluable to fishers of Tarpon—the silver king, for its great power enables it to buck heavy seas even on substantial sea-worthy boats, its highly improved waterproof ignition permits of instant starting under all conditions and best of all it slows down to a perfect fish-petting trolling speed, which it maintains without perfect fish-getting trolling speed, which it maintains without a miss or sputter for hours.

Not only the sportsman, but many commercial fishermen, also, are using the Elto constantly. This latest motor of Ole Evinrude's has completely captured them for not only does it give them the abundant power necessary for their work but is so amazingly light in weight, rugged and dependable both in starting and in consistent performance.

PLANTS

Robins Dry Dock & Repair Co. Erie Basin, Brooklyn, N. T.

Tietjen & Lang Dry Dock Co. Hoboken, N. J.

o Yacht Basin Co. Foot of 23rd St. Brooklyn, N. Y.

White Fuel Oil Engineering

Corperation
Todd Oil Burning Systems
742 East 12th St., New York

Clinton Dry Docks, Inc Foot of Clinton St. Brooklyn, N. Y.

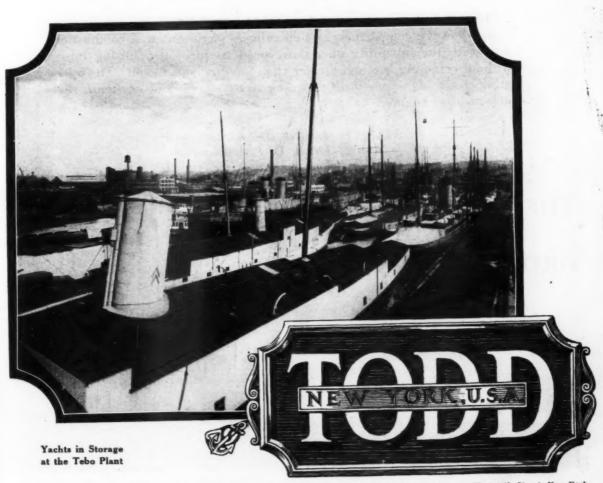
Todd Shipbuilding & Dry Dock Co., Inc. Mobile, Ala. Todd Dry Dock &

Construction Corp. Tacoma, Wash. Todd Dry Docks, Inc. Harbor Island, 16th Ave. S. W. Seattle, Wash.

Todd Oil Burners, Ltd. London, England

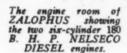
YACHT owners recognize in the reliability of the Tebo Basin Plant of Todd Shipyards Corporation their best assurance that their vessels will be given the care they merit. Special facilities are offered for building, refitting, repair and storage.

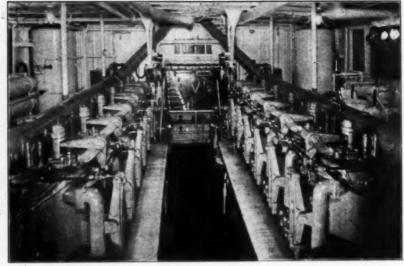
TODD SHIPYARDS CORPORATION Plant of Tebo Yacht Basin Co. Foot of 23rd Street, Brooklyn, N. V.



When writing to advertisers please mention MOTOR BOATING, the National Magazine of Motor Boating, 119 West 40th Street, New York







ZALOPHUS signalizes the development of a new type of pleasure craft. Larger and more able than the typical motor houseboat—far roomier and more economical to operate than a conventional yacht of its size—this houseyacht combines the comfort and accommodations of the former type with the seaworthiness and cruising ability of the latter.

NELSECO DIESEL power makes such a boat possible and practicable. It provides the compactness and cleanliness of the internal combustion type with the reliability of a slow speed engine. Its cruising range without refueling is much greater than gasoline and steam. The operating cost is about *one-third* that of a steam engine and *one-tenth* that of a gasoline engine.

NELSECO MARINE DIESELS are built in sizes of 120 B. H. P. and upwards. Latest bulletins and prices on request



Advertising Index will be found on page 150



CHOPPY water. Westinghouse Batteries are
sturdily built to withstand
the jolts from choppy
water and the vibration
from high speeds. For example: There's a patented
shock-absorbing U-shaped
rubber gasket wedged
around the battery posts,
making a positive leakproof seal and protecting

the plates. Strong grids,

durable, high-quality wood

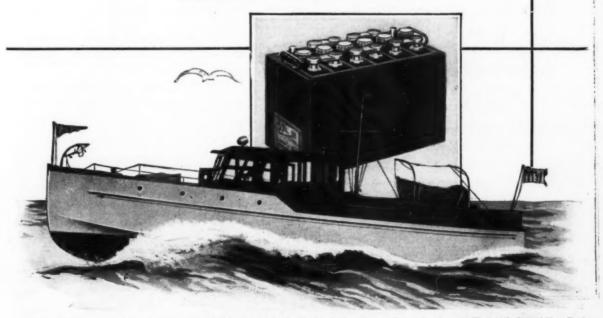
separators, rubber insulating sheets, and a staunch case, all combine in adding ruggedness, dependability and long life.

Consider, too, that Westinghouse Standard Batteries are OVERSIZE. Their plate area is larger—their current capacity as much as 20 per cent greater than that of ordinary batteries. Like the reserve supply of fuel, this extra stored-up current adds to your peace of mind when you're far from port.

Westinghouse Batteries have been adopted as standard equipment by the Miller Engine Company, Peerless Marine Engine Corporation, Standard Motor Construction Company and Sterling Engine Company.

WESTINGHOUSE UNION BATTERY CO., Swissvale, Pa.

WESTINGHOUSE BATTERIES



When writing to advertisers please mention Motor Boating, the National Magazine of Motor Boating, 119 West 40th Street, New York



Practically all their new boats the pass year.

Fouling Green, including the INTERNATIONAL 6 METER RACERS

INTERNATIONAL 6 METER RACERS boats the past year were painted with Marblehead Anti-

CLEAN

OR WOOD

ALEXANDER GRAHAM BELL
Marblehead Green for years in his Experimental Boat Department, where

Marblehead Green for years in his Experimental Boat Department, where hig speed results were obtained.

FOR CRUISING AND RACING YACHTS AND VESSELS

Most Powerful Preventite of Marine Growth and Destructive Boress. A is Bilppery Finish. Lasts a long time and is INVALUABLE FOR RACING Truising Yachts saves its first cost many times over in expensive repairs and repainting work.

It has no Equal For Trupical Waters As A Protection Against Twrodos ALL FIRST CLASS DEALERS AND YACHT YARDS.

STEARNS-McKAY MFG. CO., Marblehead, Mass., U. S. A.

J. E. Caldwell & Co.

Philadelphia

Trophies in Precious Metals

Designed and Made

Loving Cups, Bowls, Vases For Immediate Delivery

Silverware for Every Use to Which Silver Is Adapted

> Pearls and Precious Stones Watches and Clocks Fine Stationery

Prompt Service by Post

Chiquita, a Fast Knockabout

(Continued from page 33)

It is to have a 6-inch permanent piece on each end, the balance being in the one panel. The coaming is to be shaped as per plan of 34-inch mahogany. The back on the after end to be 34 inch of \(\frac{4}{3}\)-inch mahogany. The back on the after end to be \(\frac{4}{3}\) inch and to continue to the bottom edge of the coaming. There will be a panel to fill in the space below between the cleats which is to be in alignment with the coaming and which is to be secured with two turn catches on each side. A seat can be provided, but this space can be used to better advantage for two or three chairs or cann steels which are practical for fishing or others. chairs or camp stools which are practical for fishing or otherwise. All exposed finish is to be mahogany.

Finishing and Painting: The entire hull is to be thoroughly

dressed and sanded. The bottom seams and chine and the first seam above the waterline are to be lightly caulked with spun cotton rolled in. Seams above the waterline are to be blind caulked with closed seam by making a groove in each plank in the center of its edge and inserting a strand of soft seine twine. It is to have a coat of hot oil made by mixing two-thirds boiled linseed oil and one-third pure turpentine, applied boiling hot. This is to be followed by a coat of heavy lead paint inside up to the first plank batten, and then two coats of a desired color up to the clamp. Seams on the bottom are to be filled with a composition also the chine and first seam. This should be followed by a coat of lead paint up to the waterline. The sides are to have a coat of lead primer and three coats of color, a light gray suggested. The bottom to be finished with three coats of Valspar bronze or equivalent paint. The decking is to have three coats of color besides that previously specified. This is to be applied after the covering boards have been varnished. The flooring should have two coats of color. All natural finish The nooring should have two coats of color. All natural mish to be properly filled with paste filler and to have three coats of Valspar varnish or equivalent. All surfaces are to be properly prepared by sanding well with fine sand paper before applying the next coat and forty-eight hours must be allowed between each successive coat. The roofing, if of never-leak material, will need no preparation whatever. It should be stretched well, and if it cannot be procured in one piece a seam should be made in the center.

be made in the center.
Fender: This should be of 11/4-inch half round oak or

Fender: This should be of 134-inch half round oak or mohagany. It should be securely screw fastened and the holes counterbored and wood plugged. There should be an additional fender beginning where the top fender intersects the side, which should continue to the stern as indicated on the plan. This should be fastened in a similar manner.

Fastenings: All fastenings where exposed are to be of bronze or copper. If galvanized material is used it is to be well red leaded and the holes wood plugged. All screws below the waterline are to be of brass, while those above may be of galvanized iron. All screws should be at least three times the length of the material which is to be fastened.

length of the material which is to be fastened.

Hardware and Fittings: The steerer is to be of the regulation type with a 16-inch wheel and of the scored drum type. It is to be located as indicated on the plans. The rudder is to be of bronze to suit the design and may be secured from the architect. It should extend through a special stuffing box hung on a special bracket and to be fitted with a special type sliding tiller. To be connected to the wheel with ¼-inch bronze cable running through 3-inch sheaves and the necessary fair leads. The cables are to be carried along the port side crossing over under the stern. Fasten a 1-inch board about 8 inches wide across the hull, cutting out an are so that the tiller will clear and fasten the blocks to this. A turn buckle should be provided on the cable line to take up the slack.

on the cable line to take up the slack.

The strut is to be of manganese bronze and of the special Hacker type. To be secured with six bronze bolts. A reinforcement should be provided in the way of a 1½ by 8-inch board notched over the keel and fastened to the chines. The strut is through bolted to this.

The shaft log will be of the Erico no-bind type, fitted for a 1½-inch shaft. It is to be screw and bolt fastened to the keel. The cutwater is to be of a special brass type fitting over the stem. A ¾-inch half round brass moulding may be used instead if desired. It is to be securely screw fastened and to extend two feet under the stem.

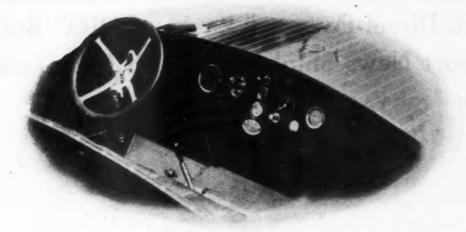
The fuel tank to be a seamless steel tank 18 by 36 inches. It

The fuel tank to be a seamless steel tank 18 by 36 inches. is to be well chocked into place and clamped with 1/8 by 11/4-inch galvanized iron, binding same with canvas in red lead. A filler deck plate should be installed directly above with the filler opening in the center of the center plank. A fuel outlet of ¼-inch pipe size should be fitted in the bottom.

The deck fitting should include the following items: One special bow check one special poet light and bitt four 3 inch.

special bow chock, one special post light and bitt, four 3-inch Erico type ventilators, two 7-inch special cleats on the side, one 8-inch special cleat on the stern, one stern flag socket, two 5-inch chocks on the stern, eight 4-inch standard port lights, hinges and quadrants on hatch cover as required.

(Continued on page 132)



JUNIOR BEARCAT

For those admirers of the standardized Belle Isle Bearcat who have long desired a runabout of the same high quality, but of lighter power equipment and proportionally lower cost, the new Junior Bearcat is especially designed.

Both craft are of identically the same hull design and construction with the exception that Bearcat Jr. has an enlarged after cockpit, accommodating seven persons, but no forward cockpit.

Bearcat Jr. is of the 25-mile-an-hour class. It is fitted with a thoroughly dependable 75 H.P. Scripps marine motor and carries the same guarantee as America's finest runabout, the standard Bearcat.

Mahogany trim, piano finish, deep-upholstered seats, double-planking, complete fittings and, moreover—Bearcat quality all the way through—makes Bearcat Jr. worthy of the same high confidence and esteem universally accorded the standard Bearcat. The price is \$4,250 f.o.b. Detroit, plus tax.

BELLE ISLE BOAT & ENGINE CO.

9668 E. Jefferson Ave., Detroit

Eastern Distributor

Wilbur H. Young 522 Fifth Ave. New York, N. Y.

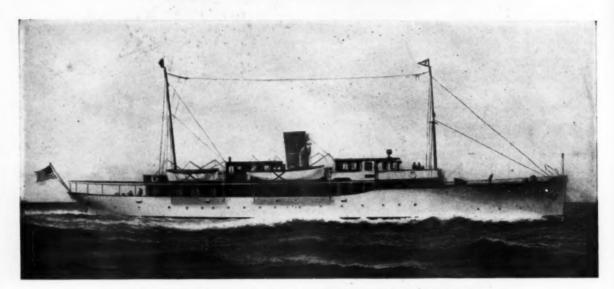
Belle Isle Boats are Better Boats Com, Humphrey Birge Hotel El. Merasol

Western Distributor

Santa Barbara, Calif.

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172-ft. Diesel-Powered Yacht "OHIO" Built by Newport News Shipbuilding and Dry Dock Co. YACHT AND SHIPBUILDERS



Owner, E. W. SCRIPPS Designers. COX & STEVENS



Plant Located at Newport News, Va., on Hampton Roads
NEW YORK OFFICE—WOOLWORTH BUILDING—233 BROADWAY



Power Your Boat with a Palmer Engine

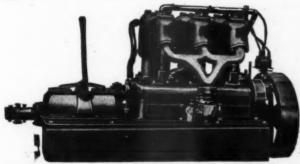


Model VH, 14-16 H.P.

A high speed four cycle engine with enclosed overhead valves and overhead camshaft. Equipped with starter, generator, battery, high tension magneto, jump spark ignition. Four cylinders, cast en bloc.

ignition. Four cylinders, cast en bloc.

There isn't a handsomer, smoother running or more up-to-date engine on the market than the Palmer Model

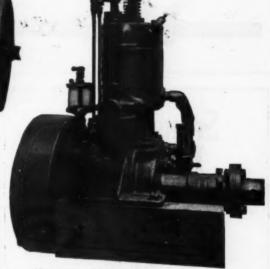


duty marine motors

10-12 H.P. 15-18 H.P. \$425 \$600 NR-2 NR-3 NR-4 20-24 H.P.

Palmer Engines are reaping the reward of more than a quarter century of honest manufacturing and fair dealing. Year in and year out, Palmer popularity grows as new buyers are added to the hundreds of boatmen who are operating Palmer Engines with supreme satisfaction.

Palmer Engines are built for every type of boat, 2 H.P. to 80 H.P. High speed, medium duty and heavy duty.



\$98<u>00</u> Model YT, 2 H.P.

four cycle valve-in-head motor designed especially for yacht aders and other small beats. Weight 95 lbs.

You'll never find a better built, more carefully designed or more reasonably priced motor than the Palmer, no matter which size and type of Palmer engine you consider.

Write today for latest illustrated catalog

PALMER BROS., ENGINES, Inc., Cos Cob., Conn., U.S.A. New York, 128 Lexington Ave., bet. 28th & 29th Sts. Baltimore, 306 E. Lombard St. Philadelphia, 9 N, 6th St. Portland, Maine, Portland Pier.

When writing to advertisers please mention MoToR Boating, the National Magazine of Motor Boating, 119 West 40th Street, New York

Type-A Form-X

Bronze Geared Throughout

With housing, gears and shafting of bronze, salt water can never corrode Oberdorfer

They are made especially for marine use and will give dependable service for years under all sorts of conditions. Used for oil, fuel or water. Each pump is carefully tested before leaving the factory.

M. L. OBERDORFER BRASS CO.



SPENCER-SMIT PISTONS



Largest Manufacturers

Pistons Exclusively

SPENCER-SMITH MACHINE CO. HOWELL, MICHIGAN

Chiquita, a Fast Knockabout

(Continued from page 128)

Motor Installation: The motor is to be a model 50 Kermath. Motor Installation: The motor is to be a model 50 Kermath. It is to be properly aligned and fitted to a 1½-inch shaft, then bolted to its foundation. The exhaust to be copper or steel tubing or regulation galvanized pipe. If pipe is used it is to be fitted with 45-degree elbows and arranged to run under the flooring to the stern, having a slight reverse so that it will come to the transom about 6 inches above the waterline. The discharge end is to be fitted with a flange, which shall be asbestos packed. A ½-inch tube to run a portion of water into the exhaust line for cooling should be fitted. The water intake is to consist of a regulation fitting provided with a swing check is to consist of a regulation fitting provided with a swing check valve and sea-cock valve. It should be connected to the pump with heavy rubber hose. The overflow should be arranged with a regulation overflow fitting and a hose connection securely clamped. Gasoline is to be carried from the tank to a Stewart vacuum tank mounted in the motor room through 3%-inch copper tubing. A 5/16-inch copper tube to carry fuel to the carper tubing. A 5/16-inch copper tube to carry fuel to the car-buretor. There will be a valve at the tank and another between the tank and the motor of the no-leak type. All wiring is to-be made as per instructions furnished by the motor manu-facturer. Wiring is to be well cleated into place and as incon-spicuous as possible. The starting motor switch is to be wired spictious as possible. The starting motor switch is to be written complete and installed in an accessible position. Ignition wiring is to be carried to a switch mounted on the after side of the cabin or on the inside if desired. Motor controls are to be carried to the steering wheel. The clutch lever is to be arranged so that it will be convenient to the operator. The storage so that it will be convenient to the operator. The storage battery may be installed on the starboard side of the motor in a locker or any other convenient place. The opening in the battery may be installed on the starboard side of the motor in a locker or any other convenient place. The opening in the door is to be sufficiently wide so that the motor may be taken through if necessary. The propeller is to be a three-blade 16-inch diameter and 20-inch pitch Hyde wheel. At 1,400 revolutions this motor should produce a speed of about 20 m.p.h. Electric Wiring: For control of the electric lights a four gang switch may be mounted on the cabin bulkhead either-inside or out. One gang will control the sailing lights and one the stern light. A third one will control the cabin lights, while the fourth one will serve for either a spot or emergency.

one the stern light. A third one will control the cabin lights, while the fourth one will serve for either a spot or emergency light as desired. The cabin lights can be of the dome type and one at the forward and one at the after ends will be sufficient. The wiring should be run down through the center and a cleat fastened over the wires to conceal them. An ammeter as well as other instruments can be carried to the cabin end and a neat arrangement is a small cabinet with a removable door which may be locked when the boat is not in service. All wiring is to be made with brewery cord and well cleated insulated where necessary. All joints to be well made,

and insulated where necessary. All joints to be well made, soldered and taped.

Equipment: The necessary equipment such as cushions, life preservers, anchor lines, and other fittings, are not included in these specifications. If the boat is to be built by a professional builder, these items may be included in the contract or they may be furnished by the owner. The items of necessary equipment should include the following: one 30 pound anchor with 100 feet of 54-inch manilla line, one 40 and one 35 foot half inch decking line two 4-inch fenders, one approved fine exinch docking line, two 4-inch fenders, one approved fire ex-tinguisher and bracket, one boat hook, one boat paddle, one fog horn, one motor driven horn, one bilge pump, 3-inch Kapoc filled cushions, mule skin material suggested, and linoleum for the floors. All the fittings and special equipment called for in these specifications can be secured from the architect.

Loans Offered to Boat Builders

Santa Barbara, California is a fine place for boys to live, particularly if you are interested in boating. The local yacht club there has organized a building and loan association for boat builders to foster interest in boating there. The fund has been started by wealthy members of the club and will be added to as required. The plan is to loan the boat builder three-quarters of the cost of building his boat. The security will be the completed boat and the moral obligation of the sportsmen. The boy who wants a little cat boat or the business man who is interested in a motor boat will have equal access to the fund. The club has announced that it will lend \$30.00 on a \$40.00 boat to any boy who is really interested in boating. interested in boating.

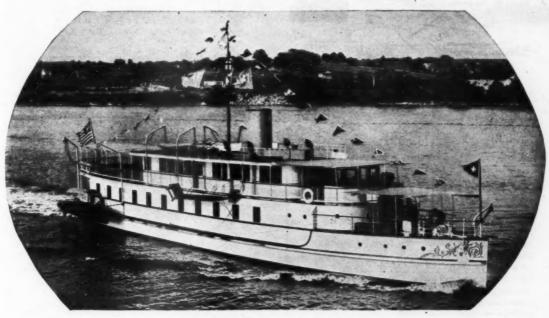
A Correction

In the descriptive article on the Westinghouse motor boat batteries the illustrations of the radio battery and the Motor boat battery were reversed with the captions under the cuts. The one which was described as the special radio battery should have been the twelve volt battery intended for motor boat service.

MATHIS YACHT



BUILDING CO.



120-ft. Mathis-built Houseboat "Pioneer"

President Harding in Florida

is sojourning this year on the 120-ft. Mathis-built Houseboat, "Pioneer." Last year his Florida home was the 85-ft. Mathis-built Houseboat, "Nahmeoka."

Mathis-built Houseboats

are chosen by the leaders in American affairs—because the more a man knows, the greater becomes his appreciation of their leadership.

Mathis Yacht Building Co.

Specialists in Houseboats and Cruisers from 40 to 120 feet



Cooper's Point Camden, N. J.

HOUSE BOATS

AND YACHTS

When writing to advertisers please mention MoToR Boating, the National Magazine of Motor Boating, 119 West 40th Street, New York



SER VICE

We have solved the problem of efficient Marine Motor SERVICE, regardless of where the boat is operated-service wherein new parts are needed and supplied quickly—that's the kind of SERVICE we give. No delays, no misfits—whatever part fits a Ford engine will fit the "Cadyford." The constituent parts are the best and most carefully made that modern manufacturing methods and skilled mechanics can produce.



CADYFORD MOTORS 4 cyl. 4 cycle— 12 to 25 H.P.

COST

We not only give SERVICE as the name commonly implies, but we give SERVICE in Initial The Cadyford is the lowest priced motor of its kind on the market, from the open type, equipped with Atwater-Kent and no reverse gear for \$280.00 to our Special type, completely enclosed, with high tension magneto, overhead valves, electric starter and reverse gear for \$600.00. We also build 2 cycle motors from 11/2 to 8 H.P.-\$50 to \$170. Our catalog is free; write for it.

> There is a CADY Dealer near you; Write for his address

C. N. Cady Co., Inc.

304D Centre St., Canastota, N. Y.

PIONEER MARINE ENGINE MANUFACTURER

Established 1883

Questions and Answers on Lesson No. 13

(Continued from page 41)

secure bow and stern lines, making the bow line fast first.

26. Q: In question 23, describe landing with the wind from the southeast.

A: In this case it is possible to approach the float by circling A: In this case it is possible to approach the float by circling about so as to approach on a southerly or an easterly course, with the intention of landing the starboard side on the easterly, or the port side on the southerly faces. When sufficiently close to the float, check the headway and permit the wind to drive the boat against the float and secure bow and stern lines.

27. Q: In question 23, describe landing with the wind from the south.

A: It will be necessary to proceed past the float and reverse the course of the boat so as to approach the float on a southerly course. Land with the starboard side against the easterly face of the float and in this case it will be merely necessary to check the headway when abreast of the desired position and secure bow and stern lines, making the bow line fast first.

28. Q: In question 23, describe landing with the wind from the southwest.

A: In this case it is best to head in on a westerly course parallel to the edge of this float. Check the headway and permit the wind to force the hull sideways to the float, when lines can be secured at the bow and stern.

29. Q: In question 23, describe landing with the wind from the west.

A: There is a choice of landing with the starboard side against the southerly face of the float, or with port side against the northerly face. Approach on a westerly course parallel to the selected face of the float and run abreast of the desired position. Check the headway and secure the boat, making the bow line fast first.

30. Q: In question 23, describe landing with the wind from

the northwest.

A: Approach the float on a northwesterly course. Land with the port side of the boat against the northerly face of the float and run abreast of the desired position. Check the headway and secure the boat, making the bow line fast first.

31. Q: In question 23, assuming that there is no wind, but that the current is flowing from the north, describe how you would land when coming up from the south.

A: Approach the wharf on a northerly course parallel to the east face of the float. Check the headway of the boat with the bow into the current. Secure a bow line

and then the stern line.

32. Q: In question 23, assuming that there is no wind, but that the current is flowing from the south, describe how you would land when coming up from the south.

would land when coming up from the south.

A: It will first be necessary to proceed past the float and approach it on a southerly course against the current. The landing will then be made exactly the same as described for question 31.

33. Q: Assuming you desire to pick up a mooring on the Hudson River with the tide flowing ebb and your boat coming down the river, describe how you would do it.

A: Circle completely about in the stream so that the boat will be heading against the ebb current. Approach the mooring buoy against the current and slow down with the boat heading directly into the stream. Do not permit the hull to swing out of the line of the current. When sufficiently close to the buoy pick it up at the bow or, if single-handed, approach it so that it comes directly along-side of the steering position. With the headway checked, the lines can be picked up and as the boat begins to drift with the current the line can be secured at the bow.

34. Q: If you should desire to come to anchor in a southerly wind, which way should your boat be heading before throwing over your anchor (assuming no current)?

throwing over your anchor (assuming no current)?

throwing over your anchor (assuming no current)?

A: Heading south into the wind.

35. Q: If your anchor became made fast in rocks or other obstruction on the bottom so that you could not readily haul it on board, what action would you take?

A: The general method would be to pay out a long length of cable and then circle about the anchor on the end of this cable. This will probably break it loose in some other direction. Another option would be to haul in tight on the anchor cable with a winch, and then try to break it out by main force. This may result in a broken or bent anchor or a parted cable. Another option would be to buoy the cable and pass another line in a loop around it. Maneuver the loop down the cable so that it engaged the flukes of the anchor and then endeavor to raise it, flukes first.

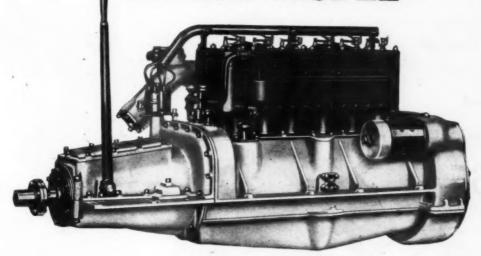
(Continued on page 142) (Continued on page 142)

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PACKARD MARINE ENGINES JUNIOR MODEL



Specialization and Light Weight

Specialization of design and light weight—two highly important considerations in the choice of a marine engine—are well represented in the Packard Junior Model.

Here is an engine designed especially for marine duty, with adequate provision for the requirements of such service, and with a total weight of only 650 pounds, ready for installation.

The reverse gear is integral with the crankcase, and automatically lubricated by the engine lubricating system.

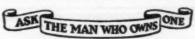
Light weight is attained through a generous use of aluminum and the "all over" machining of the crankshaft,

SPECIFICATIONS

6—Cylinders
33/4" Bore—5" Stroke
Piston displacement, 268 cu. in.
H.P., 45 at 1800 R.P.M.
Weight complete, 650 lbs.
Cylinders, cast en bloc

Crankcase, aluminum composition Ignition system, Delco Oiling system, full pressure Crankshaft, 7-bearings Electric starter Price, \$1500

PACKARD MOTOR CAR COMPANY, DETROIT





The INTERNATIONAL-16

A husky 4-cylinder, 4-cycle unit power plant all-enclosed marine motor with

Ford Replacements

Complete Unit Power Plant including Bosch Magneto with Impulse Coupling.

Electric Starter and Generator at extra charge.

The INTERNATIONAL-16 offers more power and satisfaction for the money than any other four cylinder motor on the market today. It is strictly high grade in design and construction, following the best accepted marine engine practice. Every moving part is enclosed except the magneto drive shaft; this includes enclosed flywheel and built-in reverse gear. Lubrication indi-

Best of all, the INTERNATIONAL owner can get expert service anywhere in the world and repair parts with minimum expense and delay because wearing parts of this engine are absolutely interchangeable with standard Ford motor parts, obtainable at Ford Sales and Service Stations everywhere.

cated by oil pressure gauge.

Write today for full particulars

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INTERNATIONAL MFG. CO.

Detroit, Mich., U. S. A. 439 Fort Street, East

Export Dept., 132 Nassau St., New York, N. Y.





No leaning over stern of boat to attach a Liberty Motor. Just fasten it to the boat on shore. Then shove out and off 70H FO.



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No matter how shallow the water, the Liberty Motor will drive your boat well up on the shore.



Propeller automatically rises over sunken logs and stones, and continues to propel boat.



"Drives Your Boat Where'er 'twill Float"



The Only Motor for Weedy Water

THE Caille Liberty Rowboat Motor will drive your boat through weeds so thick you couldn't row—through water so shallow your boat will scarcely float-through areas where sunken logs and treacherous stones would work havoc to any other motor-through rough water and calmin fact, anywhere your boat will float regardless of adverse conditions.

And that isn't all. The Caille Liberty Motor is the only motor that will drive your boat up on the shore. It is the only rowboat motor that can be attached to the boat on land and shoved right out into the water. The only motor that gives you 100% use of your boat. Then why pay higher prices for less efficient motors?

The Caille Liberty provides ample power and gives you greater speed. Being built on the same principle as regular launch motors, it is much simpler in design, has fewer parts, has motorcycle control, runs with less vibration and will last longer. This ad is full of strong statements. Make us prove them. Send for our catalog.

Catalog also shows the famous Caille Five-Speed Motor-the highest development in a vertical type rowboat motor

The Caille Perfection Motor Co. 6214 2nd Boulevard Detroit, Mich.

"I Drove Through Thick Mass"

The Caille Perfection Mistor Co. Detroit Mich. Gentlemens:

Wood Lake, Neb.

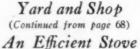
We are well pleased with our motor. The writer has driven it through mose so thick as to almost atop the boat, but the propeller did not clog and ran right along, also through rushes. Just the thing going to and from the fishing and hunting grounds.

Yours truly,

CAILLE (PRONOUNCED "CALL")

LIBERTY MOTOR

for Row Boats



An improvement in fuel combustion devices adapted particularly for use in cooking stoves and made in the form of portable stoves designed for use in the galley or as an attachment to be placed in the fire box of the ordinary coal burning type of stove is the oxo-gas burner made by the Gloria Light Company of Chicago. This device uses common kerosene oil which is vaporized and mixed with 96 per cent of atmospheric air which provides oxygen enough to combine with every last heat unit in the fuel. It proper cent of atmospheric air which provides oxygen enough to combine with every last heat unit in the fuel. It produces a large volume of heat with the smallest possible loss of efficiency. Oxo-gas is a nearly perfect form of combustion since there are no ashes, soot, or smoke. The application of this principle to the cooking and heating purposes on boats, offers the convenience of city gas with increased efficiency, lower cost, and greater simplicity of operation. Two gallons of kerosene will produce heat units equivalent to those contained in 1,000 feet of manufactured gas. Accordingly the cost of operating one of these burners will vary from 1 1-2 to 2 cents per hour.

Oxo-gas burners are being installed in many of the most

Oxo-gas burners are being installed in many of the most prominent yachts as replacements for other types of burners

which have proven unsatisfactory.

These burners are being installed by the Great Lakes Corporation and the Belle Isle Boat Company in all their new boats.

Johnson Adds Anti-Cavitation Plate

The Johnson Adas Anti-Cavitation Fine that the patented Anti-cavitation plate, heretofore used on the Outboard Canoe Motor only, is now standard equipment on all Johnson Motors. This device, which is a polished Lynite plate, clamps to the drive shaft column and extends out over the propeller. In rough or shallow water, or on a boat which has a stern design which does not leave the water properly, this plate prevents the formation of eddy currents which sometimes draw air into the propeller and cause excessive slippage and racing of the motor. This condition of cavitation is something which all outboard motor manufacturers and users have had to contend with for a long time. Necessity dictated its use on the outboard canoe motor. It was then found that in many cases it would help toward maxiand users have had to contend with for a long time. Neces-sity dictated its use on the outboard canoe motor. It was then found that in many cases it would help toward maxi-mum efficiency on outboard motor boats and would not de-tract from the efficiency where not needed. The Johnson Motor Company has therefore made it standard on all models.

Belle Isle Company Spreads Out

The increasing popularity of the Belle Isle Bear Cats is evidenced in the sales activity. Arrangements have been completed by the Belle Isle Boat & Engine Company for the distribution of their famous runabouts on both the Atlantic and Pacific coasts. Wilbur H. Young, formerly president of the Columbian Bronze Corporation, has taken over the sales and distribution of these boats on the east coast, with headquarters in New York City. An office has been established at 522 Fifth Avenue, and demonstrations of these famous boats will be arranged as soon as the weather permits. Boats will be on hand at a convenient location, close to the city where they can be observed in action at all times. On the west coast, Commodore Humphrey Birge, of Buffalo, winner of the 1922 Fisher-Allison race, has signed a contract to handle the sale of Bear Cats in Southern California waters. A boat will be kept at Santa Bar-Southern California waters. A boat will be kept at Santa Barbara for demonstration purposes after April 1. Headquarters will be established at the Hotel El Merasol at Santa Barbara, pending the location of a permanent establishment. S. S. Moore will be associated with Commodore Birge in this project.

A Clever Tool

A novel measuring instrument called Out Slide Mikes has A novel measuring instrument called Out Slide Mikes has recently made its appearance for measuring the diameters of cylinders between the limits of 25½ and 5 1/16 inches by thousandths of an inch. It does the work of the micrometer caliper, giving a direct reading, fractions of an inch, and thousandths. It will read for example on a cylinder which would measure 4.3175 by the micrometer caliper as 4 5/16 plus .005. This is particularly useful for the mechanic who is not well versed in converting decimals. The graduations on the instrument are very legible and easily read as they are at least three times larger than the corresponding graduations on the caliper. There is no sense of touch necessary to use the instrument and larger than the corresponding graduations on the caliper. There is no sense of touch necessary to use the instrument and its compactness is also one of its advantages. It is in one piece and cannot get out of adjustment, and in addition it is also inexpensive. The Shaap Company in Brooklyn, New York, who are making this device, have also in preparation a similar instrument for inside measurements.



Spring Outfitting Should Include Upholstery

N the Spring there comes the regular fitting, retrimming and improving of the general appearance of all types of boats. Especially is there need for an attractive upholstery

Doats. Especially is there need for an attractive upholstery material.

Upholstery is also one of the important considerations of boat builders and owners as they begin Spring planning. In the selection of upholstery fabric for cushions, deck and wall lining, deck chairs, and other uses, there is absolute need of an upholstery material that has, besides attractiveness, the qualities of service, durability and resistance to rain, wind, and all the elements experienced in the life of a water craft.

It must be that owners are realizing more and more the need

all the elements experienced in the life of a water craft. It must be that owners are realizing more and more the need of such qualities in upholstery, for there has already been evidenced a marked increase in the demand for Chase Leatherwove—the popular, durable upholstery and deck lining material. Incidentally, L. C. Chase & Co., the Manufacturers of Leatherwove, are celebrating their seventy-fifth anniversary. The well known Chase name, respected throughout the textile world, assures the quality of Leatherwove.

Leatherwove has proved to be admirably adapted to the many upholstery uses on motor boats, large sailboats, yachts, and similar craft. This handsome, economical, leather-like material has a fine, rich appearance which keeps its beauty through years of the most exacting service.

Another Leatherwove feature appeals strongly to the boat

Another Leatherwove feature appeals strongly to the boat owner. Leatherwove is made up into scores of distinctive, harmonious patterns and colors ranging from plain black neutral tones to striking Spanish effects. Leatherwove comes in different grades to especially suit the different purposes for which such a fabric is used. The wide range of patterns and colors and the various gradings of Leatherwove make it popular with the owner who wishes to express particular atmosphere

colors and the various gradings of Leatherwove make it popular with the owner who wishes to express particular atmosphere and to fit out his craft in any desired style.

The query "How will it wear?" is fully answered by Chase Leatherwove. There is almost no limit to the wear resisting, weather defying durability of Chase Leatherwove. It has an enduring resistance to all elements of exposure, such as dampness, sea air, heat, cold, and rain.

If you are a builder samples can be had from your regular channels of supply. Boat owners gladly sent samples by the manufacturers—L. C. Chase & Co., Boston.

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You couldn't choose a finer stove for your galley—

Specifications

Body of galv. iron strongly riveted. All fittings are galv. or of copper or brass; tank made of polished drawn brass fitted with pressure gauge and carefully tested. Separate tanks made of galvanized iron and equipped with copper feed pipe.

Prices

No. 2 Galley, attached tank. \$16.50 No. 3 " " 18.50 No. 3 " 1 gallon " 23.50 No. 3 " 3 gallon " 27.50 No. 3 " 3 gallon " 45.00 3 " 1 gal. " 35.00

No. 2 has 6-inch grates



Three Burner Model with Separate Tank

RUISER-GALLEY-STOVE is a time tested product developed by men who have been building gasoline stoves for years. It embodies suggestions and has met with the rigid requirements of many of the country's prominent motor boat builders and owners. They have all pronounced CRUISER-GALLEY-STOVE the best on the market today. It is now included as standard equipment by many builders of first class boats.

You couldn't choose a finer galley stove. CRUISER-GALLEY-STOVE is sturdily built of the strongest materials. Burns ordinary motor gasoline with a hot, steady, blue flame that a thirty mile gale cannot blow out. And it cooks delicious meals with the ease and efficiency of the range at home in your kitchen. You'll want CRUISER-GALLEY-STOVE for your boats!

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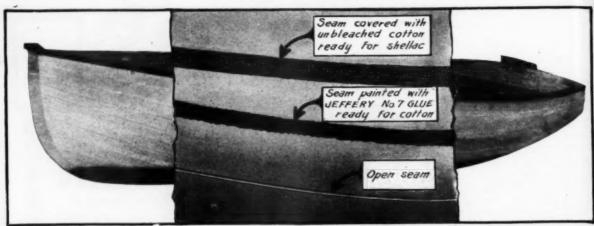
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DOES YOUR BOAT LEAK? LET US TELL YOU ABOUT



JEFFERY'S

WATERPROOF

MARINE GLUE

The enlarged section of the above illustration shows how the hull seams of a boat can be treated when the owner does not care to go to the expense of covering the entire hull with cotton or canvas as recommended in our booklet entitled, "How to make your boat leakproof."

The lower seam is shown open, as usually is the case when a boat is laid up during the winter, the middle seam is shown painted with a coat of our Jeffery's No. 7 Marine Glue ready for the cotton fabric which is laid on the glue and ironed into it with a warm flat iron as shown on the top seam. The cotton is then given a coat of shellac and painted. When the job is completed according to these directions the patching strips can scarcely be detected.

We however believe and earnestly recommend that if a more permanent result is desired, the entire surface be covered with fabric, laid in our Jeffery's No. 7 Black soft quality Marine Glue. This treatment will insure a boat with a coat of paint once a year being absolutely watertight indefinitely. Put your leak troubles up to us—we will help you stop them.

Send for our booklets, "How to Make Your Boat Leakproof" and "Marine Glue—what to Use and How to Use it"

JEFFERY'S WATERPROOF MARINE GLUE

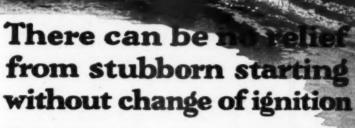
In all the various grades

For sale by all Yacht, Boat and Canoe Supply Houses, Hardware, Paint and Oil and Sporting Goods Dealers

L. W. FERDINAND & CO.

152 Kneeland Street

Boston, 11, Mass.



YOU must know from experience and observation that hard stubborn starting has always been the curse of the outboard motor. Your common sense must tell you that with gasoline getting poorer in quality every year, there can be no possible relief from hard, stubborn and uncertain starting without a change in ignition. You can be sure that Ole Evinrude, the pioneer designer and manufacturer of outboard motors made no backward step when he discarded old type ignition.

As a manufacturer and user of much experience, he knew that old type ignition was the cause of hard starting and he adopted the wellknown Atwater-Kent Unisparker with battery ignition. He says:

"Considering that present gasoline is poorer in quality, and that for use in outboard motors it must be mixed with lubricating oil, the only relief from stubborn starting is a big hot spark, independent of cranking speed."

A big hot spark is always "on tap" from the Elto's Hot Shot Water-proof Battery. The Elto instantly starts at the first quarter turn without use of ropes or strength. Anyone in the family can start the Elto. Atwater-Kent Unisparker prevents juice wastage; battery lasts full season and more. No complicated electrical devices. No returning to factory for re-magnetizing. Every hardware store is a service station. It's easier to snap a battery into connection than to crank, crank, crank!

Write for catalog — not a picture book, but full of facts —packed with specific information to help you judge true motor values.

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Full 3 H. P.—that's an extra H. P. over other lightweight outboards. Safe Rudder-Steering — no dangerous pivot turning.

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Lightest per H. P. of all outboard motors—yet double the bearing surfaces of other lightweight motors.

Floating type propeller shaft—another exclusive Elto feature—which in addition to safety-tilting, protects drive and propeller shafts and gears from disalignment, fast wear and breakage.

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Examine All Details Carefully

(Continued from page 38)

SSUMING that the engine has been more or less torn down and overhauled during the winter, connecting rod and main bearings taken up and adjusted, worn parts replaced with new and the engine now reassembled, and with a supply of fresh gas in the tank all ready to start up. Of course the spark plugs have been cleaned and examined for defects. All wires have been correctly placed and securely connected. Water and sediment have been removed from gasoline strainer or filter or perhaps the whole gasoline line cleaned.

Provided this work has been carefully and thoroughly done, there are still at least two places that may require tuning up or adjusting after starting up before the motor will put forth its best effort and do it quietly and to your entire satisfaction. They are the carbureter adjustment and the spark timing. Either of these is easily removed or thrown out of adjustment while overhauling and the careful adjustment of both is necessary for best performance of engine. With the carbureter, the needle valve on most makes it easily moved, while the rods connecting timer with spark control levers are easily bent or disarranged chang-

ing slightly the timing of spark. For a marine engine with practically a given load, I believe the best way to tune up and adjust these parts is by using a speed indicator or revolution counter on the shaft end or other rotating part of engine to check up the revolu-tions. The spark can be slightly retarded and the revolutions counted with, say, open throttle, then advance slightly and take another reading. Likely there will be noted a slight increase in speed. Repeat this until no more increase can be obtained, then retard slightly and if motor is running smoothly without knock or pound, you have the most efficient spark timing and also one where engine will run without overheating. The same plan can be used in adjusting carbureter, working to obtain maximum speed with

minimum gas.

One of these revolution counters costs little and provides a simple means at all times for checking the operation of the motor. If with a given propeller, you get 750 r. n. m. last year and you overhauled the motor and find you are turning up only 735 r. p. m. this year, something is certainly wrong and you keep looking until the trouble is located.
On the other hand if a gain of ten or twenty revolutions is noted, well that's different. You're all smiles now.

C. H. C., Saginaw, Mich.

Questions and Answers on Lesson No. 13

(Continued from page 134)

36. Q: If you ran aground what means would you take to get off bottom?

A: The answer to this question will vary according to the The answer to this question will vary according to the nature of the bottom on which the boat finds itself. If in tidal waters and a rocky bottom, it might be best to wait for the tide to raise the boat clear, rather than to drag it over the rocks to deeper water. If in ordinary sand or mud bottom, the best practice would be to get an anchor out over the stern on a very long cable as promptly as possible. Hand in tight on this cable, with a winch if possible, and reverse the engine, bringing all live weights in the boat to the stern, assuming that the grounding occurs on the forward portion of the hull. If possible secure the assistance of another boat to help drag the unfortunate one into deeper water. If these methods fail, there is no choice but to wait for the rising tide to do the work. tide to do the work.

37. Q: With a tide having an average range of 12 feet and the chart showing a depth of 6 fathoms at mean low water, which on the particular day in question occurs at noon, how deep would you expect the water to be at 1 P.M.?

A: Six fathoms and two feet, or 38 feet.

38. Q: What equipment in addition to that required by law do you think is essential to be carried aboard the average

you think is essential to be carried aboard the average motor boat?

A: Charts of all waters generally traveled, tide tables, light and buoy lists, lead and line, compass and bearing finder, course protractor, tools and engine parts, extra anchor and cables, and more fire extinguishers than the law requires. A first aid kit, while seldom required, might prove invaluable.

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THE IMPROVED LA MODEL 68

6 and 8 H. P. 2 cyl. - 2 cyc. Engines

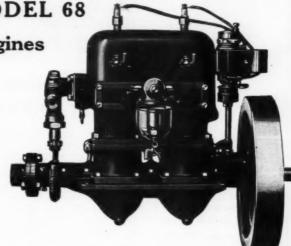
6 H. P. for 15 ft. to 24 ft. craft 8 H. P. for 20 ft. to 30 ft. craft

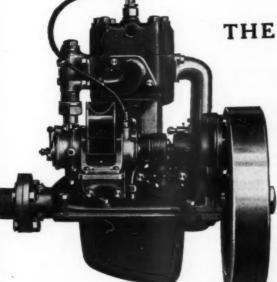
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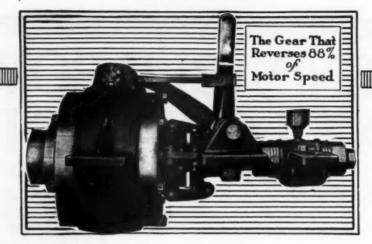
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"Your gears are dependable. They stand the strain. They get there every time. We have never had an engine returned to us for re-adjustment because of a faulty Joes Gear. We thank you.

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and here are seven more

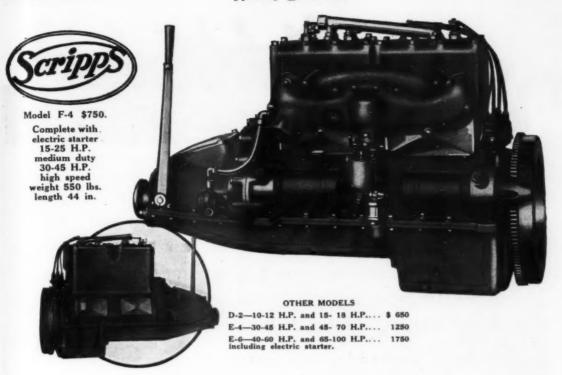
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It's Here

An exceptional motor for the smaller runabout or cruiser—duplicating at modest cost every essential held desirable in the largest and costliest power plants.

The admiring throngs at the National Show registered another Scripps triumph—a motor high above the ordinary even among good motors.

Progressive engineering and pride in craftsmanship are readily apparent throughout.

The high lights most frequently commented on are the beauty of outline and finish—the tone of evident quality—the compactness and light weight—the tremendous power—the large crankshaft and bearings—the pressure lubrication—accessibility—quietness, and smoothness—the Hot Spot Manifold—economy and the reasonable price.

More and more each season discriminating yachtsmen are agreeing that there is nothing finer than the Scripps and the new F-4 will do much to further that opinion.

It embodies the same high quality found in the larger shopmates, the D and E series, rounding out a well balanced line from 10 to 100 horsepower, for auxiliary—commercial craft, runabout or cruiser.

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The new single propelled Sea Sled, with airplane type cockpit in centre of boat, engine installed way aft, and its very simple mechanical arrangement, was one of the features of the recent National Motor Boat Show.

These 25-footers are in quantity production at our works. The hulls are of double planked mahogany finished bright and built to the highest standard of workmanship.

We are prepared to guarantee 30 miles per hour speed with standard equipment and greater speeds can be had by using higher powered motors.

Also built in Sedan type.

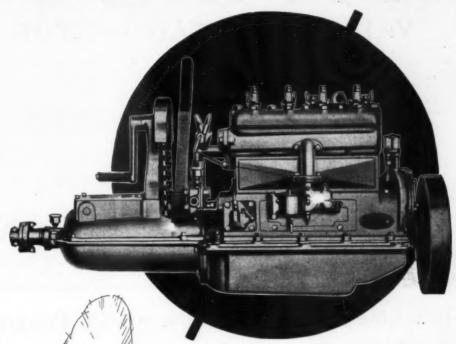
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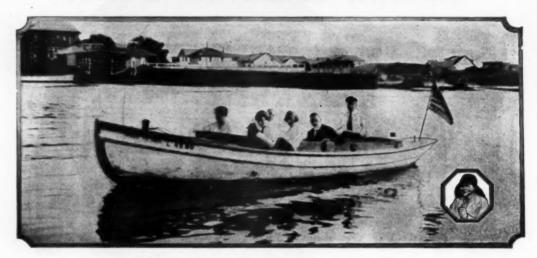
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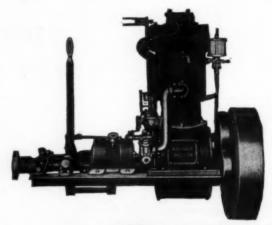
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"The motor was installed in a heavy Government hull, 21 feet long, and I take out as many as fifteen people, whenever I want to, knowing that I will get back without any trouble. I have towed a good many other boats, including a large cruiser, but have never needed a tow myself. The little Frisbie has worked hard ever since the spring of 1920 and my first expense was for the water pump checks you furnished me last week.

"I never have regretted putting in the Frisbie for I don't have to worry about losing time and money laying up for repairs; instead, day after day, I can go to sea, knowing that my Frisbie will work satisfactorily and economically."

Very truly yours, (Signed) Frank N. Cuneo



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Catalog of 14 models on request

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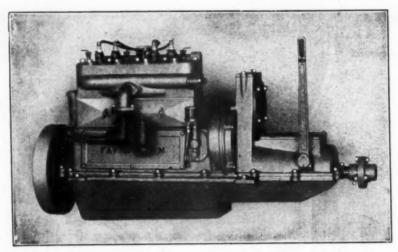


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